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MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

NOVEMBER AND DECEMBER,

1871.

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MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
STATISTICAL DIVISION,
December 16, 1871.

SIR: I present herewith, for publication, a digest of the reports of statistical correspondents upon the quantity and condition of the later crops of the season, with occasional extracts from such correspondence; also articles on wheat deterioration, value of corn-fodder, agricultural societies and farmers' clubs, notices of recent stock sales, notes from the garden, entomological record, chemical memoranda, scientific notes, a table of market prices of farm products, a meteorological record, and a variety of other matter from the correspondence of this division.

J. R DODGE,
Statistician.

Hon. FREDERICK WATTS,
Commissioner.

CONDITION OF THE CROPS.

CORN.

The corn area was greater in 1871 than in any former year. In June and July the prospect was favorable for a larger aggregate than in the great corn year, 1870, which exceeded the yield of the preceding year by a quantity greater than that which represents the advance made from 1859 to 1869. The corn crop of the latter year being small, while the wheat crop was exceptionally large, a comparison of the figures for the decennial periods will very inadequately represent the average increase of either crop in the past ten years. The first indications of damage to corn were received in June from many points in the West where worms in sod lands were more destructive than usual. Some injury was wrought by frost in northern New England as late as June 24. In July the condition of maize was reported above an average, though chinch-bugs were becoming numerous in the Ohio basin. Growth was slow in moist, cold soils in the Allegheny region till July 1. In August the effect of drought became manifest in different portions of the west, and of the Gulf States. The ravages of the chinch became more severe in the Western States, in some localities proving a scourge. With these exceptions, circumstances were highly favorable to vigorous growth and thorough ripening. In the districts parched with drought, rich soils, deeply plowed and well cultivated, generally yielded heavy crops of sound corn. Neglected and shallow culture, more than poverty of soil, wrought the ruin so frequently reported in such localities.

The high temperature of August advanced maturation rapidly, and when aided by drought caused premature ripening, leaving the kernels shrivelled, loose on the cob, and not filled out to the point. In such cases the harvest disappoints the expectation raised by the appearance of the field. In northern latitudes frost appeared from September 21 to 30, causing complaints of soft corn. As a whole, the crop is about an average, and in view of the increased area occupied, a large one. Compared with that of last year, it is scarcely less in total number of bushels, though somewhat lower in yield per acre. The estimate for 1870 was 1,094,000,000 of bushels, being 220,000,000 more than that of the small crop of 1869, while a calculation of the local estimates of the present gives a total product of 1,092,000,000. The States producing less than last year are Maine, Vermont, New York, Maryland, North Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, Tennessee, West Virginia, Kentucky, Indiana, Michigan, California, Oregon. The remaining States show an equal or an increased yield. The quality compares favorably with last year in Massachusetts, Rhode Island, Connecticut, Delaware, Virginia, Missouri, Wisconsin, Minnesota, Iowa, Kansas, Nebraska, and Oregon.

Androscoggin County, Maine.—Extra in quality and quantity.

Kennebec County, Maine.—Grasshoppers destroyed, or nearly so, whole fields of corn, beans, turnips, &c. In a few localities the yield of corn is larger than usual.

Aroostook County, Maine.—Most unfavorable season for corn in twelve years. There was more planted than usual. It is not universally cultivated here; wheat, oats, barley, and buckwheat being considered more profitable.

Coos County, N. H.—Injured by frost.

Windsor County, Vt.—Corn in many instances failed to ripen.

Orange County, Vt.—In many localities failed to mature before the frost of 21st; hence the product is smaller and of poorer quality than last year on equal acreage.

Orleans County, Vt.—Much soft corn.

Caledonia County, Vt.—Injured in some localities by frost of September.

Addison County, Vt.—The season has been too cold for corn.

Norfolk County, Mass.—The crop would have been large but for depreciation by early frost. The quality of that saved is very good; better than last year's crop.

New London County, Conn.—Excellent crop, but the storms and warm weather have tended to mold it a little and to injure the fodder.

Litchfield County, Conn.—Seriously injured by worms and grasshoppers; in some towns nearly destroyed.

Albany County, N. Y.—Poor crop; ripened badly.

Madison County, N. Y.—Injured by frost in September.

Delaware County, N. Y.—Extra growth of stalk; ears short and unsound.

Genesee County, N. Y.—The drought has injured the crop more than was anticipated, shortening the ears, and leaving the kernel smaller than usual. Corn-fodder is of the finest quality.

Sullivan County, N. Y.—Injured by early frost.

Warren County, N. J.—Crop somewhat short, but rather better in quality than was anticipated.

Ocean County, N. J.—Excellent crop.

Gloucester County, N. J.—The summer having been cool and not dry, the crop is very good.

Burlington County, N. J.—Hardly an average on light sandy soil.

Lycoming County, Pa.—Ripened early; finely eared, and perfectly sound.

Elk County, Pa.—Fair crop on increased acreage; quality injured by drought.

Bucks County, Pa.—The crop is not meeting expectations either in quantity or quality.

Beaver County, Pa.—Quality injured by drought, and in some fields the grain is loose on the cob. Considerable soft corn.

Kent County, Del.—A good crop is being gathered in good condition.

Baltimore County, Md.—Medium crop; quality good. In fields properly cultivated the crop is excellent; fields that were weedy and slothfully tilled yielded a heavy crop of mullens.

Cecil County, Md.—Better yield than last year, but not equal to expectations before husking; many short ears.

Howard County, Md.—Crop diminished by drought; but on good land, where a good

sod was turned under for corn, the crop has suffered but little compared with that on light and thin land.

Goochland County, Va.—Best crop for many years. Some of the upland corn, which was planted late, was injured by the dry weather of July and August.

Washington County, Va.—Crop, light; quality, indifferent; cause, the drought.

Surry County, Va.—Best crop in ten years. Farmers are beginning to cultivate fewer acres and to use more manure than formerly. Now that they have to work for themselves they find it profitable to use more brains and to save muscle.

Highland County, Va.—Injured by drought and worms. Short crop but well matured.

Powhatan County, Va.—Crop 20 per cent. greater than last year, and of good quality.

King William County, Va.—Crop unusually heavy.

King George County, Va.—Yielding well; best crop since the war.

Culpeper County, Va.—Average. Very little unsound corn.

Prince George County, Va.—One-third better than last year.

Fairfax County, Va.—The supply of fodder will be less than usual, in consequence of the drying up of the early corn crop, and the injury to the late crop by frost.

Scott County, Va.—Short crop. Drought.

Henrico County, Va.—Unusually large crop. Quality injured by wet weather.

Gloucester County, Va.—Season favorable and the crop would have been larger if the cultivation had been even tolerable.

Rockbridge County, Va.—Corn has not dried well. It is too soft to crib, and it is feared much will be lost.

Matthews County, Va.—Best crop since the war.

Haywood County, N. C.—Crop decreased by drought, and quality injured by storms.

Caldwell County, N. C.—Reduced 10 per cent. by drought.

Granville County, N. C.—Fully 10 per cent. better than in 1870. Turning out much better than anticipated two months ago.

Transylvania County, N. C.—Lighter than usual; but about the same number of bushels as last year on an acreage 15 per cent. greater.

Perquimans County, N. C.—Not equal to anticipations, but larger crop than last year, on an increased acreage.

Hertford County, N. C.—Unusually fine crop, quantity and quality.

Lincoln County, N. C.—Far better than expected two months ago, owing to fine weather.

Rockingham County N. C.—Crop much better than supposed a month or two ago.

Henderson County, N. C.—With the 10 per cent. increase of acreage the product will be equal to last year's crop, but quality inferior, damaged by being blown down and by continued rains.

Greene County, N. C.—Splendid crop in quantity and quality.

Sampson County, N. C.—Almost a failure on poor uplands; very good on lowlands.

Franklin County, N. C.—Increased product on increased acreage.

Duplin County, N. C.—Unusually fine on swamp lands; on uplands not more than half a crop.

Gaston County, N. C.—The corn crop of this year admonishes us in forcible terms of the necessity of deep plowing, thorough preparation, and early planting. The few farmers in this county who have observed these rules have made fair crops, notwithstanding the long drought.

Stanly County, N. C.—Crop has turned out better in quantity and quality than anticipated. Fewer rotten ears than usual.

Williamsburgh County, S. C.—A failure in the northwestern corner of the county; other parts excellent crop.

Anderson County, S. C.—Drought reduced upland crop fully 50 per cent.; a full average on bottom-lands.

Cherokee County, Ga.—Fine crop on uplands; too wet for lowlands.

Milton County, Ga.—Crop has gathered much better than was anticipated; quality very good.

Greene County, Ga.—Ruined by high water on the lowlands after maturity.

Fayette County, Ga.—Tolerably good on well cultivated uplands.

Columbia County, Ga.—Proves less crop than anticipated.

Early County, Ga.—Reduced one-third by excessive rains.

Jackson County, Ga.—Turning out a little better than anticipated, though the crop is poor.

Worth County, Ga.—Rotted considerably in the field.

Clayton County, Ga.—The wet season reduced the crop on bottom-lands at least 50 per cent., but the loss was made up on the uplands.

Douglas County, Ga.—Yield not so good as last year, but more planted.

Oglethorpe County, Ga.—Late corn entirely destroyed; crop mostly early.

Columbia County, Fla.—About three-fourths of a crop compared with that of last year, 10 per cent. of which is rotten, caused by the incessant rains. During the last

120 days it has rained on my farm 110 days, accompanied by heavy blows on the 17th and 25th of August.

Alachua County, Fla.—The storms had a disastrous effect on corn, beating it to the ground and causing it to rot.

Jackson County, Fla.—In consequence of the drought of July the ears did not fill out well.

Orange County, Fla.—The storms of August broke down a large quantity of corn, and the ground was so saturated that in many places it was impossible to get the corn out of the field; in consequence much of it sprouted; the acreage was much greater than ever before.

Hamilton County, Fla.—Much damaged by wet weather.

St. John's County, Fla.—Great loss from the storms.

Levy County, Fla.—Crop short, but quality good.

Conecuh County, Ala.—Yield equal to last year; acreage increased.

Dallas County, Alabama.—Poor yield. Deeper plowing and more thorough preparation of the soil might have alleviated in a great measure the injury inflicted by the drought.

Blount County, Ala.—Deficient in quantity and quality.

Yalabusha County, Miss.—Yield fully 25 per cent. less than last year; quality inferior.

Jefferson County, Miss.—Almost a total failure; not sufficient to last us until March.

Jasper County, Miss.—Almost a failure on bottom and prairie lands; upland crop good.

Pike County, Miss.—Rotting in the fields.

Lee County, Miss.—Small, light, and badly worm-eaten.

Grenada County, Miss.—Unusually short; in many sections not half a crop.

Tishemingo County, Miss.—Late corn affected by drought. Early crop very fine. More corn, more acorns, and more hogs than in any other year since the war.

Rapides Parish, La.—Not more than 5 per cent. of an average yield per acre.

Claiborne Parish, La.—Nearly ruined by drought.

St. Mary's Parish, La.—Even a greater failure than anticipated. In some localities the crop hardly pays for harvesting.

East Feliciana Parish, La.—At least 10 per cent. found to be rotten on gathering.

Red River Parish, La.—Inferior in quantity and quality, but increased acreage makes up deficiency.

Grayson County, Texas.—Materially injured by drought; but the increased acreage will make the product equal to the crop of last year. The best acre of bottom-land entered for premium at our fair yielded 81 bushels; the best prairie, 63 bushels.

Matagorda County, Texas.—Injured by being blown down, which caused it to rot on the ground. There will be enough for home consumption.

Travis County, Texas.—Acreage increased 40 per cent.

Fannin County, Texas.—Larger yield than anticipated. On black land this crop is well matured and sound, almost verifying the opinion that corn can be raised on black land without rain.

Coryell County, Texas.—Acreage increased 50 per cent. Product reduced one-half by drought.

Liberty County, Texas.—Crop reduced by drought, but the acreage was larger than last year.

Austin County, Texas.—Owing to increased acreage the product slightly exceeds that of last year.

Kendall County, Texas.—One-third of a crop. Drought.

Upshur County, Texas.—Yield lighter than last year, but the grain is sound. Crop about 15 per cent. short of last year.

Milam County, Texas.—A considerable surplus of corn.

Rusk County, Texas.—Corn does not yield from the field as well as last year.

Lampasas County, Texas.—Equal in bushels to the crop of last year, a greater area having been planted, but the quality is inferior. Drought.

Williamson County, Texas.—Acreage 25 per cent. larger than last year. Yield about two-thirds as great per acre. Quality only fair.

Lavaca County, Texas.—Acreage increased 25 per cent., but yield per acre decreased.

Hardin County, Texas.—Crop heavy, except in a few places.

Johnson County, Ark.—Acreage increased 25 per cent. The drought has reduced the yield 30 per cent. Quality 10 per cent. above average.

Washington County, Ark.—Yield 30 bushels per acre. The husks are thick, ears small and short.

Jackson County, Ark.—Very faulty, rotting, and has the heaviest shuck I ever saw.

Prairie County, Ark.—Large surplus, very little of which will be needed for fattening purposes, on account of the very heavy mast.

Carter County, Tenn.—Reduced crop. Drought.

A correspondent at Pocahontas, Arkansas, writes that in the counties of Fulton, Sharp, Lawrence, Randolph, on the hilly country, and Craighead, Poinsett, Cross, Green,

St. Francis, and Phillips, along Crowley's Ridge, have made more than an average crop of corn. Acreage of corn increased one-third, but less cotton.

Giles County, Tenn.—Very good crop—40 bushels to the acre.

Knox County, Tenn.—Much better than was thought last month.

Monroe County, Tenn.—Quality generally good. Injured in places by grasshoppers eating the blades before the maturity of the crop.

Gibson County, Tenn.—Crop increased 20 to 30 per cent. in acreage, product, and quality.

Obion County, Tenn.—Drought injured the crop 25 per cent. The prospect was for an increase of 25 per cent. over last year.

Grainger County, Tenn.—Crop 50 per cent. short, and quality inferior.

Fentress County, Tenn.—Injured by frost and rain in the spring; by drought since, and by lice upon the roots in June and July; yet the yield is an average one. The quantity needed will be less, owing to the abundant mast.

Dyer County, Tenn.—Crop unusually heavy and well matured. Quality very fine.

Sevier County, Tenn.—Yielding much better than expected. Early corn, on good ground well cultivated, is better than last year. Uncommonly sound.

Monroe County, W. Va.—In some neighborhoods a failure; in others a fair average crop of good quality.

Marion County, W. Va.—Corn hard and dry, and a good crop gathered.

Harrison County, W. Va.—The most favorable season for corn that we have had for several years,

Tyler County, W. Va.—Product greater than last year; quality not so good.

Boone County, W. Va.—Deficient in quantity; quality excellent.

Taylor County, Ky.—Yields better than anticicipated in former reports.

Butler County, Ky.—Best crop since 1854.

Laurel County, Ky.—The early-planted corn only matured; that planted as late as May 11 was very light.

Daviess County, Ky.—The crop will turn out about 1,000,000 bushels.

Anderson County, Ky.—Said to be the best crop since 1855.

Graves County, Ky.—The crop turns out better than heretofore reported. Nearly an average.

Owen County, Ky.—Better crop than for several years.

Ohio County, Ky.—Short in quantity, but quality superior, and with abundant mast; corn is likely to be cheaper than usual.

Henderson County, Ky.—Yield on bottom-lands reduced by drought; on uplands, little affected; quality, superior.

Russell County, Ky.—Much better than anticipated. In fields planted early on land broken deep the crop is better than last year. I have gathered half my crop, which turns out 10 per cent. better than last season. Many of my neighbors who plowed shallow will not gather half a crop. Grain sound and good.

St. Francois County, Mo.—Fair crop, notwithstanding the drought; on deep-plowed land 50 per cent. better than where the plowing was shallow.

Clinton County, Mo.—A late crop; chinch-bugs reduced the yield and injured the quality.

Harrison County, Mo.—Yielding well; quality good; worth 20 cents per bushel.

Carroll County, Mo.—The drought reduced the crop to about an average; quality a little below that of the crop of last year; the chinch-bug injured the quality.

Chariton County, Mo.—Injured by the chinch-bug; otherwise the crop would have been very heavy.

De Kalb County, Mo.—Deep-plowed land, well cultivated, has yielded a very heavy crop; shallow-plowed, a very poor crop; grubs in all the fields, but did not injure the crop on the deep-plowed land.

Nodaway County, Mo.—Splendid weather for gathering corn. Probably more corn in the cribs now than the whole crop amounted to last year; very dry and sound.

Holt County, Mo.—Crop turns out much less than was thought last month; the grub and the chinch-bug have destroyed perhaps one-third.

Vernon County, Mo.—Superior crop.

Marion County, Mo.—Crop unusually large, but grain light, from drought and chinch-bug.

Madison County, Ill.—Nearly an average, but lighter than last year.

Lawrence County, Ill.—Reduced by drought and damaged by the chinch-bug.

Macoupin County Ill.—The drought has prevented late corn from filling as well as usual.

Fairfield County, Ill.—Drought and chinch-bug have reduced the crop at least one-third.

Boone County, Ill.—Product about the same as last year on an increased area. Yield per acre reduced by drought; also by hail, in the north, of the storm of July 30; grain sound and dry. Selling at 28 cents per bushel.

Winnebago County, Ill.—Not yielding as well as expected before husking. Late crop uniformly poor.

Williamson County, Ill.—Crop 20 per cent. short, but the deficiency will be made up by the abundant mast.

Carroll County, Ill.—Harvested unusually early. Yield above average in western part of the county, say 50 bushels to the acre. In the southwest part, it is reported 10 per cent. below the crop of last year.

Sangamon County, Ill.—Shortened by drought.

De Kalb County, Ill.—Three-fourths of a crop, but quality excellent.

Champaign County, Ill.—Half a crop—grub-worm, drought, and chinch-bug.

Elkhart County, Ind.—Reduced one-half by drought.

Noble County, Ind.—Corn generally matured, yet, from the dry summer, it is not a full set.

St. Joseph County, Ind.—Yield reduced 25 per cent., but with the increased acreage the aggregate product will not be more than 10 per cent. short.

Marion County, Ind.—Not yielding so well as expected. The grain is found to be loose on the cob, and chaffy in many instances.

Dubois County, Ind.—The drought prevented corn from filling to the point of the cob.

Coles County, Ind.—Yield reduced considerably by premature ripening.

Knox County, Ind.—In the spring the crop bid fair to be the heaviest ever raised in the county, but the terrible drought greatly disappointed the farmers. I am past sixty, and have never known such a drought before.

Steuben County, Ind.—Largely in excess of an average in quantity and quality.

Harrison County, Ind.—Injured by drought, but improved by favorable fall weather.

Lake County, Ind.—Much inferior to the crop of last year in quality, but equal in quantity, owing to increased acreage.

Fayette County, Ind.—Not so good in quantity or quality as was anticipated a month ago.

Hendricks County, Ind.—Owing to the cut-worm and drought the crop is considerably below that of last year.

Martin County, Ind.—Reduced product. Crops on new lands generally satisfactory, but deficient on old, and thin and dry rolling lands.

Clark County, Ind.—Not turning out as well as expected; much loose on the cob.

LaGrange County, Ind.—Short crop. Owing to drought, ears did not fill out.

Orange County, Ind.—Everybody disappointed with the small yield and poor quality.

Perry County, Ind.—Corn looks well in the fields, but fails in gathering.

Franklin County, Ind.—Not equal in quality to the crop of last year; loose on the cob.

Darke County, Ohio.—Larger crop than last year, but not so sound.

Defiance County, Ohio.—Dry season reduced the crop on clay lands.

Morrow County, Ohio.—Crop better than anticipated.

Coshocton County, Ohio.—Best crop for many years.

Henry County, Ohio.—Short crop; drought; ripened well; much of it dry enough to shell at time of husking.

Logan County, Ohio.—Crop being gathered in the best condition, and, being sound, will add much to the hog product.

Berrian County, Mich.—Large crop, but light in consequence of the drought.

Hillsdale County, Mich.—Suffered much from drought.

Cass County, Mich.—In superb condition.

Mecosta County, Mich.—Not so large a yield as expected, but the grain is sound.

Greene County, Wis.—Increased acreage will give a greater yield for the county.

La Fayette County, Wis.—Some fields have yielded 80 bushels to the acre.

Goodhue County, Minn.—Crop increased by increased acreage. Ripened well.

Meeker County, Minn.—Crop well matured.

Steele County, Minn.—Best crop we have ever had, both in quantity and quality.

Jones County, Iowa.—Ripened too quickly to be of good quality.

Story County, Iowa.—Yielding much better than expected.

Muscatine County, Iowa.—Remarkable season for corn. Yield large in bulk, and the weight is heavier than usual. Yield 100 bushels per acre in some instances on bottom land.

Woodbury County, Iowa.—Unusually good crop.

Chickasaw County, Iowa.—A fine crop.

Floyd County, Iowa.—Unusually sound and dry.

Henry County, Iowa.—Best matured crop I have seen during a residence here of thirteen years.

Calhoun County, Iowa.—Injured by hail in some localities.

Adams County, Iowa.—Cheaper than at any time within fifteen years.

Dallas County, Iowa.—Less smut than usual.

Allamakee County, Iowa.—Stalks are larger, but the ears are smaller than last year.

Shelby County, Iowa.—Not so good as expected; ears short, and not well filled out.

Johnson County, Iowa.—Largest crop for many years; 60 to 80 bushels per acre.

Mitchell County, Iowa.—An excellent crop.

Washington County, Iowa.—Such crops, for quantity and quality, never known here before.

Crawford County, Kans.—Average yield 25 per cent. better than last year; average largely increased.

Clay County, Kans.—Crop remarkably heavy; ripened up well; yield 15 or 20 bushels per acre above an average.

Douglas County, Kans.—Much injured by chinch-bug; now selling corn at 20 to 30 cents per bushel.

Franklin County, Kans.—Yield not equaling expectations; chinch-bug.

Washington County, Kans.—Yield not so good as anticipated, though better than in years past; the chinch-bug injured the crop.

Atchison County, Kans.—Some very good, some very poor, in consequence of the chinch-bug, especially when planted near small grains.

Labette County, Kans.—In quantity and quality above the average of any that I have seen this season in any of the Western States.

Butler County, Kans.—Better than ever before in this part of Kansas.

Cowley County, Kans.—In quantity and quality No. 1.

Osage County, Kans.—Very light; caused by chinch-bug and white grub. Chinch-bug still alive by the million.

Cloud County, Kans.—Almost an entire failure, owing to drought.

Anderson County, Kans.—Largest acreage and largest yield per acre ever grown in the county.

Dixon County, Nebr.—Temperature higher the past season than ever before known by white men here. Hence corn did remarkably well. Potatoes not so well.

Cuming County, Nebr.—Very heavy crop, dry enough to shell as soon as gathered. The trouble of farmers seems to be to find places to put their corn.

Cass County, Nebr.—Considerably above the average where not cut up by the hail-storm of July. More than an average the county over.

Lancaster County, Nebr.—A perfect success; ripening perfectly before frost.

Lake County, Cal.—Crops all matured well.

Fresno County, Cal.—Acreage double that of 1870. Quality of crop better also.

Box Elder County, Utah.—Attacked by grasshoppers in many localities just at the time of silking, reducing the yield to not over 60 per cent. of that of 1870. Acreage increased about 50 per cent.

Taos County, N. Mex.—Far above average. Matured unusually well in this valley.

San Miguel County, N. Mex.—Far below average, owing to the drought.

Yuma County, Arizona.—A failure, owing to the drought. No overflow in the Colorado River in three years.

COTTON.

The November returns relative to the condition and yield of the cotton crop indicated a larger product than was expected in October, promising fully to make good the moderate expectations of July and August. There were no killing frosts up to the date of these reports. In rich and well-cultivated soils of the lower tier of States the plant was as green and as vigorous as in summer. In some places the top crop was maturing, though complaints of the immaturity or loss of the later growth are quite general. In the latitude of Middle Georgia, the squares formed between August 25 and September 25, under favorable circumstances, made good cotton.

The principal cause of the reduction of the yield in Texas is drought; in Louisiana, drought, insects, and black rot; in Mississippi, wet weather in spring, drought in summer, and in isolated sections the caterpillar or boll-worm; in Florida, driving winds and floods, which occasioned nearly total destruction of considerable areas; and drought has wrought more or less injury in Alabama, Georgia, and South Carolina. The yield per acre, as indicated by the November returns, is largest in Arkansas, decreasing in the following order: Texas, Tennessee, Mississippi, Louisiana, North Carolina, Alabama, Georgia, South Carolina, Florida. The more northern belt of the cotton States shows the least reduction from their usual averages.

The tabulations for November are estimates for each county of the total product of the year, expressed as percentages of the actual crop

of last year. These averages, adjusted with regard to the relative production of the counties reported, give the following results for each State: North Carolina, 80 per cent.; South Carolina, 68; Georgia, 67; Florida, 58; Alabama, 73; Mississippi, 72; Louisiana, 65; Texas, 68; Arkansas, 85; Tennessee, 90. A few counties in Virginia, Kentucky, and Missouri make reports of much the same tenor as the returns from North Carolina and Tennessee.

The quality of the fiber is reported good in all sections. A very small proportion of discolored or trashy cotton has been gathered. Some attention has been paid to improvement in quality by the use of the Peeler and other improved varieties.

Many correspondents note the superiority in yield and comparative exemption from disease under careful culture and judicious fertilization.

The cotton returns received in December are similar in tenor to the November reports, fully sustaining the moderate promise of improvement upon the somewhat gloomy views presented in October. Yet the change in condition is not so marked as to modify materially the prospect foreshadowed in the monthly reports for July and September, except that the growing season has been from 7 to 10 days longer than the average of seasons, increasing the crop prospect at least 200,000 bales. The latest returns would indicate an estimate almost identical with that of the September report, for a favoring autumn, which "could scarcely bring a crop exceeding three and one-third millions of bales." Frosts have been delayed till late in November, in some localities till the 20th, and the weather has been generally favorable for picking without waste or discoloring of fiber. A fair rendering of the recent local estimates, which have been unusually numerous and complete, gives a total aggregate of 3,400,000 bales as the present expectation of the cotton yield of 1871.

Surry County, Va.—Small acreage. Red rust and cool weather have caused the bolls to fall off.

Prince George County, Va.—The area in cotton in this county has been extended this year. The first planting was much injured by heavy rains early in May and much had to be replanted, but the favorable season later, with the increased acreage, will bring the product fully up to that of last year. The staple is very good.

Perquimans County, N. C.—Short of expectations; drought caused shedding and rust. The latter is our greatest drawback. An application of 30 to 40 bushels of good wood-ashes, applied in the bottom of the furrow at the time of planting, comes nearer to a specific than anything else I have tried.

Beaufort County, N. C.—Picking out better than expected. The season has been very favorable, and most of the crop has been ginned and sent to market. I increase my estimate 10 per cent. on the October report, attributable to the favorable weather. Good farmers will average 300 to 400 pounds of lint per acre; general average, 200 pounds.

Bertie County, N. C.—Product 25 per cent. less than last year; 200 pounds of lint to the acre; quality fine.

Hertford County, N. C.—Crop not so heavy as last year, but the staple is better and saved in fine condition. Increased interest has been taken in testing improved varieties. The Peeler and the Dickson Prolific take the lead in productiveness and staple. Improved plows have enabled farmers to cultivate this crop with much more ease than formerly, and the general spirit of improvement is greater. Many farmers in this county will produce 1,000 pounds seed-cotton per acre.

Pitt County, N. C.—A great falling off from the product anticipated early in the season, yet we have made an average crop.

Lenoir County, N. C.—Much better than was expected in July and August.

Franklin County, N. C.—Favorable fall for cotton, and the yield will exceed the anticipations of two months ago.

Craven County, N. C.—Better in quantity and quality than was anticipated when October report was made.

Sampson County, N. C.—Mostly picked out. Crop will not vary much from three-fourths of an average. The fall season has been favorable.

Newberry County, S. C.—The crop has not improved with the fall season. The fruit is too late to mature. Very little over half crop.

Kershaw County, S. C.—The receipts at the depot in this place are 25 per cent. in excess of those for September and October of 1870. The excess falls in September almost entirely, and is due to the early season, caused by the drought, which has so much shortened the total product. Notwithstanding the drought, thorough culture and a liberal (not excessive) use of fertilizers, even on lands most susceptible to the effects of the drought, have secured 400, 500, and even 600 pounds of lint to the acre. Such treatment has been exceptional.

Williamsburgh County, S. C.—The early pickings were very good, but there is very little fruit on the center or top of the plants. The harvest is now nearly over; it ordinarily runs into December.

Marlborough County, S. C.—No late crop. The stalks are full of forms and small bolls, which will be killed before maturing. Most unfavorable season in thirty years.

Lexington County, S. C.—The late fall is adding something to the crop.

Bennettsvile, S. C., November 30.—The black frost and freeze of the 16th, 17th, and 18th of October killed all the late bolls, entirely destroying all vitality. Plantations in this neighborhood usually making ten to fifteen bales of yellow (from frost,) and late cotton will not turn out a single bale this year.

Muscogee County, Ga.—Most unfavorable year since 1866.

Early County, Ga.—Reduced one-half by rains in early part of the season and by storms of wind and rain after the crop had matured, beating it out and so mixing it with the soil as to render it unfit for use.

Calhoun County, Ga.—Weather favorable since August 25, and most of the squares from that time to the 20th September have matured.

Columbia County, Ga.—Very short crop. The continued rains have caused considerable rot in the bolls; much has been beaten out.

Lee County, Ga.—Weather favorable, but no material change in the crop can result; about two-thirds of an average.

Fayette County, Ga.—When well fertilized and properly cultivated, on ground not too much drenched, has done well for the year. Our county, though behind many others, is manifesting increased interest in improved modes of culture and the use of fertilizers.

Upson County, Ga.—The poorest lands have made nearly a full crop, while the best lands have fallen short nearly one-half; average, 70 per cent. of a full crop. The second growth amounts to nearly half a crop, not a pod of which can mature.

Fulton County, Ga.—Favorable weather is increasing the yield, and the lint is equal to the crop of last year in quality.

Gwinnett County, Ga.—Quality good; no yellow cotton; no top crop.

Oglethorpe County, Ga.—A luxuriant "second growth," which is a serious injury, as it makes nothing and impairs the maturing of the old wood of the stalk.

Chattooga County, Ga.—The fall has been especially favorable to cotton.

Stewart County Ga.—Quality of lint better than for five years; clear and white; no sand or trash; in quantity about half an average crop.

Douglas County, Ga.—Will turn out better than anticipated, owing to the lateness of frost; area planted 25 per cent. less than last year; very little guano used.

Cherokee County, Ga.—A few farmers make 400 pounds of lint to the acre, but many acres yield at the rate of 100 to 200 pounds only.

Milton County, Ga.—Owing to the late fall, the crop will be nearly an average in quantity, and a full average in quality.

Harris County, Ga.—Cotton is not half a crop. For the surrounding counties it may reach five-eighths.

Orange Mills, St. John's County, Fla.—The heavy storms have almost to tally destroyed the crops for fifty miles around here.

Levy County, Fla.—Much short of an average crop. It is thought the crop of the county will be under 100 bales; some think not over 50; last year 200 bales.

Santa Rosa County, Fla.—Sunday night, November 11, clouds came up from the southwest, and the rain literally poured; a box ten inches deep was found to be full, and how much ran over is not known. The wind shifted to the north and cleared up, and and on the 14th, 15th, and 16th there were very heavy frosts, the first of the season.

Hamilton County, Fla.—Much damaged by storms.

Orange County, Fla.—Acreage small; completely destroyed in many places by the storm.

Gadsden County, Fla.—I have planted cotton since 1828, and have no recollection of so unpropitious a season as the present one during the entire period. Where the crop escaped the rust it was attacked by the caterpillar.

Jackson County, Fla.—Improved five per cent. since last report. The crop will average about 150 pounds of lint per acre.

Alachua County, Fla.—A disastrous year for East and South Florida. The prospect for sea-island cotton and corn was hardly ever better up to the time of the storms which swept these sections the latter part of August. The cotton was thrashed out where opened, and the young bolls were destroyed in great part. In some sections of East Florida the failure is almost total, and in no part is there more than half a crop.

Columbia County, Fla.—Cotton (sea-island grown here) much injured by the heavy blows and constant rains, which caused it to sucker badly and to throw off much of the immature fruit; while the want of sunshine has caused much of the matured bolls to rot. The cotton gathered is badly stained and can hardly rank above ordinary. The late picking much the best. The yield will not exceed 70 per cent. of the crop of last year.

Lauderdale County, Ala.—Drought, poor stand, and, in many instances slovenly cultivation, have reduced the crop to one-half an average. The yield of lint is 100 pounds to 300 pounds seed-cotton.

Calhoun County, Ala.—The favorable fall season will not materially increase the product, as the bolls that should be maturing dropped off.

Dallas County, Ala.—Five-sixths of the crop gathered.

Colbert County, Ala.—Four-fifths of the crop gathered, free from dirt or stain; consequently of superior quality.

Lowndes County, Ala.—Crop gathered; opened well: staple good.

Blount County, Ala.—The plant is small, with fewer matured bolls than usual. In quality, a full average crop.

Autauga County, Ala.—Many of the large farmers have finished gathering their cotton. Owing to the drought the cotton ceased to make after the 15th of July.

Clarke County, Ala.—Favorable season will augment the crop to some extent.

Geneva County, Ala.—The crop will exceed that of last year. The top crop heavy and of good quality.

De Soto County, Miss.—Cotton going to market rapidly, and the good price gives our county quite a prosperous look.

Jefferson County, Miss.—Will hardly average two bales to the hand, or about one-fourth of a bale to the acre. The lateness of frost has been of material advantage.

Rankin County, Miss.—Average of lint not over 150 pounds to the acre.

Lauderdale County, Miss.—No cotton made since September 1.

Pike County, Miss.—At least one-fourth less than last year.

Hancock County, Miss.—Sea-island cotton grown here. Crop about the same as last year. The yield per acre could be increased by judicious manuring. New varieties of sea-island cotton-seed would be of benefit.

Grenada County, Miss.—Short one-half compared with the crop of last year. Bad culture has added to the depreciation.

Noxubee County, Miss.—Mostly gathered. On sandy land, elevated, and well cultivated, the crop is equal to that of last year; on prairie lands well worked, a good crop; on slough and bottom lands, from bad cultivation and the wet spring, not more than half a crop. Aggregate yield fully three-fourths of last year.

Jasper County, Miss.—Cut off by boll-worm and army-worm, after being seriously injured by wet weather and succeeding drought.

Washington County, Miss.—The favorable season has improved the prospect at least 10 per cent. No killing frost in October.

Rapides Parish, La.—Cotton has pressed out even worse than anticipated. Crop nearly picked and ginned. Not more than one-sixth of an average yield per acre.

Richland Parish, La.—Not much, if any, over half a crop. Drought, rust, blight, boll-worm, and army-worm.

Washington Parish, La.—Late crop ruined by the worms; fully one-third cut off by them.

East Baton Rouge Parish, La.—Favorable fall weather has done much to improve cotton, and much remains to be picked, which will be gathered if laborers can be retained. Many, however, will be taken off to the sugar plantations, where wages are higher. The probability is that much cotton will be left in the fields to waste.

West Feliciana Parish, La.—Short crop. In spite of all drawbacks, small patches, highly manured and well cultivated, have produced splendid crops, showing that it pays to cultivate good land well.

Tensas Parish, La.—Since last report cotton has depreciated. The drought has caused it to shed, the caterpillars have stripped off the leaves, and the black-rot has caused greater destruction than both the other causes in many places. Forty-five per cent. of a crop is a full estimate.

Claiborne Parish, La.—The boll-worm reduced this crop one-half.

Red River Parish, La.—Damaged by the worm: acreage much decreased.

Leon County, Texas.—Not more than one-fourth of an average crop. Drought from May to the middle of September.

Grayson County, Texas.—The late fall has added much to the cotton crop.

Blanco County, Texas.—Short crop. Some farmers will not make any worth picking. The weed was very small. Some cotton may yet mature, yet the worm has been eating all the tender parts for about a week.

Cherokee County, Texas.—Although a light yield in the seed, cotton is turning out more than the usual proportion of lint. The small crop will be beneficial in showing the farmer that he can make more profit from a few acres well cultivated than from

more acres poorly cultivated. Farmers are learning that corn and cotton alone are not so profitable as mixed crops.

Matagorda County, Texas.—Greatly injured by wet weather, the average being reduced below the half bale per acre which the worms had left up to October 1.

Travis County, Texas.—Acreage decreased about 40 per cent. Average yield not more than thirty pounds of lint to the acre. Have not had a good rain since May.

Fannin County, Texas.—Yield light. Staple good; probably the nicest ever gathered in the county.

Liberty County, Texas.—Drought and the caterpillars have shortened the crop. The culture of sea-island cotton is assuming some importance here, the contiguity of the county to the Gulf coast rendering the locality favorable. The yield is 20 per cent. greater than last year.

San Antonio County, Texas.—Excessive rains, together with the cotton-worm, have nearly finished the crop.

Falls County, Texas.—About half a crop, with greatly decreased acreage.

Kendall County, Texas.—The desire for planting cotton is fast dying out, and oats are being substituted, which seem to flourish and give a good yield.

Upshur County, Texas.—The plant is short, but has a better crop than earlier indications warranted.

Red River County, Texas.—Notwithstanding the many disasters to the plant during the season, this county makes a good crop.

Rusk County, Texas.—The worms have eaten all the leaves from the plants, destroying the prospect for a top crop.

Williamson County, Texas.—Acreage decreased one-third. Yield of lint per acre not over half as much as last year.

Hardin County, Texas.—Less acreage than last year, but generally better, and better handled.

Dallas County, Texas.—Cotton shed the squares, and did not bloom after July. Drought.

McLellan County, Texas.—The crop all gathered, ginned, and eight-tenths sold at 12½ cents, coin, per pound, about two-thirds of the cost of production. We cannot produce cotton, averaging five years, for less than 12 cents per pound, coin; yet McLellan is the best cotton county in the State three years out of five. Worms have never damaged a crop here. The want of more thorough culture and more reliable labor is the difficulty.

Uvalde County, Texas.—Crop about 1,000 pounds seed-cotton, or 333 lint, per acre.

Arkansas County, Ark.—On bottom lands, fully 33 per cent. short; and on the uplands 50 per cent. short.

Johnson County, Ark.—About 30 per cent. less than last year. Yield of lint per acre, about 175 pounds. Cotton picked before October 12 is white and free from trash and sand.

Craighead County, Ark.—An average crop. The crop of 1870 was the best in 20 years.

Prairie County, Ark.—The September frost cut off all the young bolls. About three-fifths of a crop.

Monroe County, Ark.—Poor stand, drought, &c. Top crop almost a failure.

Lincoln County, Tenn.—The acreage in cotton has been reduced about one-half, but the yield per acre is nearly double that of last year.

Dyer County, Tenn.—The crop consists principally of the July formation of bolls, and will fall one-third short of the crop of last year. The lint is of good quality, and will be handled much better than last year.

Rutherford County, Tenn.—Best yield per acre since the war.

Haywood County, Tenn.—Owing to the very favorable season for picking, many young bolls which, it was supposed, could not mature, are now open, giving increased product.

Hardin County, Tenn.—Reduced yield, but quality above average.

Giles County, Tenn.—Owing to the fine weather, cotton is yielding better than anticipated. Every boll has matured. Acreage short 33 per cent.

Lauderdale County, Tenn.—Crop better than thought at last report. From 50 to 60 per cent. of an average crop.

Williamson County, Ill.—But half a crop, owing to the drought. The usual yield is 200 pounds of lint per acre.

POTATOES.

The total product of potatoes is reported larger than last year in all of the Middle States and in Georgia, Ohio, Wisconsin, Minnesota, Iowa, Kansas, and Nebraska. The average reduction in the Southern States is 5 per cent.; the decrease in Illinois, 35 per cent.; Missouri, 20 Kentucky, 20; Indiana, 15; Michigan, 34.

The following extracts from notes of correspondents are appended:

Aroostook County, Me.—Good and plenty of them. The Early Rose takes precedence, although Davis's Seedling holds high rank for a general crop. The latter is of good quality, yields well, and is the most hardy variety we cultivate.

Coos County, N. H.—Late crop injured by frost.

Orleans County, Vt.—Lighter than last year and more disposed to rot. Early Rose most affected.

Norfolk County, Mass.—In excess of the crop of last year, and the quality is much better; little affected by rot as yet.

Suffolk County, Mass.—Potatoes very small; suffered from drought.

New London County, Conn.—Good yield; complaint of rot in some localities, and also of worms.

Albany County, N. Y.—Not very good; rotted in some localities.

Delaware County, N. Y.—Favorable season for potatoes, and in some parts of the county they are selling at 30 cents per bushel.

Genesee County, N. Y.—Much above average in quality.

Suffolk County, N. Y.—Better than last year in quantity and quality, although there is some rot.

Warren County, N. J.—Extra in quantity and quality; a few show signs of rot, but to small extent.

Ocean County, N. J.—Some rot, especially in moist land.

Gloucester County, N. J.—The cool weather in August and September caused a deficiency in the crop of sweet-potatoes.

Camden County, N. J.—Contrary to expectations sweet-potatoes are a light crop and of indifferent quality.

Lycoming County, Pa.—Quality very fine; early crop full; late varieties few in the ground but large and good.

Delaware County, Pa.—Rotting to some extent.

Kent County, Del.—Late crop much better than anticipated.

Prince George's County, Md.—Potatoes a failure.

Washington County, Va.—Owing to the excessive dry weather the crop is light and quality inferior.

Surry County, Va.—Below average, except in particular fields. A few farmers made excellent second crops. Sweet-potatoes abundant and good; a few failures.

Prince George County, Va.—The low prices of 1869 caused a decrease in the area planted in potatoes last year. This year the acreage was increased fully 30 per cent.

Henrico County, Va.—Deficiency in the early has been made up by the late crop.

Highland County, Va.—Injured by rot and bugs.

King William County, Va.—Crop best for years.

Nansemond County, Va.—Many farmers replanted, about August 15, a part of their Irish-potato patches with small whole potatoes of the early summer digging, (Early Rose almost invariably.) The result is a heavy crop of late potatoes, fully equal to the spring crop on the same area, without additional manure.

Chowan County, N. C.—Sweet-potato crop reduced by cool nights and dry weather.

Gaston County, N. C.—Sweet-potatoes have grown beyond all expectation since the rain-fall of September; fully three-fourths of a good crop.

Stanley County, N. C.—Early crop good; late varieties are utter failure; in but few instances will the seed be returned.

Anderson County, S. C.—Only those potatoes (*Solanum tuberosum*) which are planted in the spring will grow here. I planted six acres of the Pink Eye and the Early Rose in July, and manured with cotton-seed meal and dissolved phosphate—one part of the latter to four of the former—and not one in a thousand sprouted. In August the ground was plowed and sown with Swede turnips, of which a very good crop is now growing. The land was irrigated for the latter crop.

Butts County, Ga.—I have my second crop of potatoes (*Solanum tuberosum*) from seed raised this year. The tubers are now ripe, and tops dead or yellow. With proper care in preparation I seldom fail to make a second crop.

McIntosh County, Ga.—Badly damaged by heavy rains.

Liberty County, Texas.—Sweet-potatoes reduced somewhat by drought.

Coryell County, Texas.—Sweet-potatoes almost a failure.

Falls County, Texas.—Sweet-potatoes almost a total failure.

Williamson County, Texas.—A full average crop of Irish potatoes. They keep in this climate about three months. Now nearly out of market. Seed renewed every year from the North. Not one-half a crop of sweet-potatoes, owing to the drought. A few full crops on irrigated lands.

Jackson County, Ark.—Irish potatoes almost a failure; quality poor.

Monroe County, Tenn.—Early crop ruined by frost in May; late crop by drought and bugs. Sweet-potatoes greatly improved by seasonable rains and fine fall weather.

Wilson County, Tenn.—Seriously injured by late spring frosts, and subsequently by

the bug. Sweet-potatoes were never finer—50 per cent. better than last year in quantity and quality. Turnips far above an average.

Humphreys County, Tenn.—Late crop almost a failure. Sweet-potatoes short, but quality good.

Pocahontas County, W. Va.—Product and quality affected by drought.

Tyler County, W. Va.—Product and quality better than last year; especially the Garnet and the Early Rose, the former yielding 160 bushels to the acre.

Nicholas County, Ky.—Injured by drought; the earliest the best. Sweet-potatoes good.

Anderson County, Ky.—As good a crop as has been known in many years.

Owen County, Ky.—Large crop of sweet-potatoes; single potatoes weighing 6 to 8 pounds.

Russell County, Ky.—I have lost more than half my potatoes from rot.

Harrison County, Mo.—Very fine; worth 20 cents per bushel.

Douglas County, Mo.—Bug has done much damage; the yield much better than expected.

Cole County, Mo.—Crop has suffered from the bug, the drought and rot, which latter is rather severe in many fields.

Dent County, Mo.—Bug destroyed the crop.

Sangamon County, Ill.—Crop shortened by drought. Sweet-potatoes improved by this cause.

Marshall County, Ill.—Only half a crop; quality good.

Champaign County, Ill.—Nearly an entire failure; drought.

Dubois County, Ind.—The bug and the drought reduced the crop materially.

Coles County, Ind.—Large fields failed to develop a single tuber. Causes, the bug and the drought. In some instances where Paris green was used on early-planted crops the yield is fair.

Hancock County, Ind.—Crop short in quantity; quality as good as last year. Bugs injured the crop.

Ripley County, Ind.—Crop a little short, owing to the bug. The bugs came in such force that many farmers made no effort to destroy them, and they destroyed the vines entirely. I made war upon them day after day and subdued them sufficiently to raise a fair crop. I planted for early potatoes the Early Rose, Early Goodrich, and White Sprouts. The Early Rose and the White Sprouts rotted badly after they were dug.

Steuben County, Ind.—Poor crop; bug and drought.

Harrison County, Ind.—Injured by dry weather and bugs.

Pulaski County, Ind.—Late crop good; suffered little from the bug. Early crop injured by the bug. Average, about 100 bushels per acre. By manuring and careful attention, with a fair season, 200 to 300 bushels per acre can be grown.

Perry County, Ind.—All that were put in late have failed. The early crop was so fine in quality and quantity as to increase the aggregate product. The acreage was increased also.

Lagrange County, Ind.—The Peach Blow, being late, was injured by the bug and by dry weather. Many are raising sweet-potatoes, for which our soil and climate appear to be suited.

Darke County, Ohio.—The largest and best crop ever raised here.

Coshocton County, Ohio.—Best crop for many years.

Washington County, Ohio.—The Early Rose made a good yield in some instances, but the variety is not valued highly, except as an early potato. The Peach Blow, which is our principal crop, was stinted in growth by the drought, and is consequently inferior in quality.

Berrien County, Mich.—Good yield, owing to the free use of Paris green. Quality superior.

Montcalm County, Mich.—Many farmers have not raised a potato. Selling at $1 25 per bushel.

Tuscola County, Mich.—Injured by the bug. The crop is a failure where the bugs were left unmolested. Hand-picking and Paris green are the remedies principally relied on.

Ottawa County, Mich.—Injured by the bug, but what we have are of good quality.

Cass County, Mich.—Quality good. We are making encouraging headway against the bugs.

Waukesha County, Wis.—Crop a full average, and of good quality. The bugs appeared to have destroyed them, but in three weeks nearly all the bugs disappeared. Some persons insist that they picked and destroyed the bugs, but potatoes that were not so picked over are as good as those that were.

Rice County, Minn.—Very large yield, and quality excellent. The first season in a number of years that the crop has escaped the ravages of the bug.

Goodhue County, Minn.—Not extensively planted, but the yield is much better than for two or three years past—less damage by bugs.

Steele County, Minn.—Good crop; quality fair. Injured less by the bug than for several years.

Muscatine County, Iowa.—Good yield; prices making the crop one of the most profitable of the season.

Butler County, Kans.—Best crop ever known in the county.

Lancaster County, Nebr.—Very fair quality, but not more than average yield.

Fresno County, Cal.—Acreage decreased 20 per cent., but quality of potatoes much improved. An increase in quantity and quality of sweet-potatoes, attributable to the dry season and improved irrigation.

Linn County, Oreg.—Season unfavorable to all root crops, except potatoes. The improvement in this crop is attributed to better cultivation and improved varieties.

Tillamook County, Oreg.—Injured by frost, but we have potatoes weighing upward of four pounds.

Chehalis County, Wash.—Drought caused a failure in the potato crop.

Clallam County, Wash.—Injured by early frost.

BUCKWHEAT.

This crop is a light one in nearly every State. In northern locations it was injured by frost. Failure to fill well is frequently reported, even when a good growth of straw was made. Drought in the season of germination or growth, has been an influential cause of failure. In Marshall County, Illinois, "not an acre of buckwheat was harvested." In Henry County, Ohio, little was sown, because the ground was too dry to plow, and a ripened field was unknown to our correspondent there. In some counties in Iowa it was scarcely worth cutting; in others a good crop was secured.

TOBACCO.

The product of the following States is reported above an average: Massachusetts, Connecticut, Pennsylvania, Arkansas, Illinois, Ohio, Wisconsin, Iowa, and Kansas. An average product is reported in Missouri and California; Kentucky, Maryland, Virginia, and North Carolina, the prominent sources of the supply, show a decrease. The following notes are appended:

Tolland County, Conn.—The tobacco crop is almost unprecedented in quantity, but the quality cannot be fairly determined yet, as it is not fully cured.

Hartford County, Conn.—Considering quality and quantity, the crop is 50 per cent. better than last year.

Bucks County, Pa.—The tobacco crop is confined to a few townships in the southern end of the county, but the area planted is annually increasing.

Prince George's County, Md.—Short in quantity, but quality remarkably fine, owing to the peculiarly favorable season for housing and curing. The crop will bring more money than for years past.

Goochland County, Va.—Area planted not over one-third as great as last year; quality of the crop very fine. Scarcity of plants and low prices caused the decrease in acreage.

Washington County, Va.—Injured by frost and drought,

Prince George County, Va.—Season very favorable, and I think I never saw a better crop, quantity and quality, half-pound plants being common. Some of our best farmers say that, owing to the constant failure of wheat, the cultivation of tobacco and cotton is likely to be much increased.

Orange County, Va.—Favorable season for tobacco, though the heavy frost of 22d September damaged to some extent the late crop.

Henry County, Va.—Late tobacco considerably injured by frost, especially on low land. The supply of fine bright tobacco from this county will be very light; not more than one-third as large as last year.

Nelson County, Va.—Materially damaged by frost of 20th September on low and exposed situations, which caused considerable of that crop to be cut before it was ripe. After September 25th the weather became mild, and tobacco growing on high land and in localities protected by forests and mountains, generally matured.

Campbell County, Va.—Extremely bad season. But little over half a crop.

Cumberland County, Va.—Crop much shorter than last year, owing to the dry weather in the planting season. In cases where great care was taken (such as to place a clod of

earth or a small stone on each plant after setting out, to protect it from the sun, and removing the same after the plants had taken root,) we secured a stand and a crop above average.

Floyd County, Va.—A good average in quantity and quality.

Granville County, N. C.—Owing to the scarcity of plants and the early drought not more than half a crop was expected, but the later favorable weather insures fully two-fourths of an average yield. This is one of the largest tobacco growing counties in the State. A much larger proportion than usual has been cool cured, and some of our farmers has already sold and delivered their crops at an average price of 25 to 30 cents per pound.

Moore County, N. C.—Injured by frost.

Gaston County, N. C.—Tobacco is attracting attention, and is returning flattering results to the few engaged in the culture.

Geneva County, Alabama.—Better crop than ever before.—The Connecticut seed-leaf tobacco is a complete success in this section. Product per acre at least one-third more than of our own tobacco.

Grainger County, Tenn.—The crop ripened finely.

Rutherford County, Tenn.—Acreage decreased 30 per cent. Crop injured in quantity and quality by drought.

Tyler County, W. Va.—Finest crop ever raised in the county.

Butler County, Ky.—Very fine, but not much grown.

Nicholas County, Ky.—But little raised; very good.

Daviess County, Ky.—The crop will be near 6,000,000 pounds; somewhat injured by frost in September, and some cut too green for fear of frost. Quality five to ten per cent. inferior to the crop of 1870.

Graves County, Ky.—Injured by frost; will not equal the crop of last year in quantity or quality.

Owen County, Ky.—Generally very fine, but, owing to the dry weather, does not cure as bright as it should. In some localities the frost injured the crop.

Henderson County, Ky.—Acreage decreased forty per cent. Yield per acre twenty-five per cent. less than last year. Quality much inferior, being uneven, small, much of it unripe, and some frosted.

Vernon County, Mo.—Very superior.

Cole County, Mo.—Less planted than last year, owing to late spring frosts, but quality very good.

Perry County, Ind.—Tobacco had a late start, and but little has been cut ripe.

Noble County, Ohio.—Injured somewhat in quality by frost.

Medina County, Ohio.—The cultivation of tobacco is on the increase in the southern tier of townships of this county.

Bon Homme County, Dak.—I think tobacco culture will prove a success in this county. Small quantities have been grown for home use, and the report is favorable.

SUGAR-CANE.[5]

Reports of the past two months do not sustain the promises held forth in October. The injury from sprouting has been extensive in some districts. An increase in quality as compared with the crop of last year; 145,000 hogsheads are still expected with some confidence from the increase in the area planted.

Lee County, Ga.—Sugar-cane fine.

Columbia County, Fla.—Cane is now being converted into sugar and sirup by almost every planter in the county. Yield fully as good as last year, though much damaged by the storms of August, which blew it down, causing much of it to sucker and sprout at the joints, materially decreasing the yield.

Manatee County, Fla.—Very much injured by heavy rains.

Jackson County, Fla.—The cane crop is somewhat better than last year.

Orange County, Fla.—Cane much injured, but the acreage is larger than last year.

Wakulla County, Fla.—The cane is larger and longer than I ever before saw it. The yield must be abundant.

St. John's County, Fla.—Fully an average crop. Not injured by the storm.

Levy County, Fla.—Cane is growing well, and in a month, without frost, will make up most of its loss by the storm.

Conecuh County, Fla.—Full crop; doing well; no frost to kill up to date.

Hancock County, Miss.—Raised this year for home consumption only. Ripened finely. Stalks with seventeen to twenty joints may be seen in little patches all along the coast.

Iberia Parish, La.—Acreage increased, but the yield per acre is slightly diminished. Small plantations are multiplying, and the disposition is becoming general to introduce

a system of tenantry, under which the proprietors need have nothing to do with the cultivation of the crops, but simply to take them off with the necessary machinery, upon shares. Many small planters are also engaged in growing cane, and being without means to purchase machinery, they have their cane ground at the neighboring mills. A better article of sugar is being made here than formerly. Many new defecators are in use, and some of them are really valuable. The first steamer direct from St. Louis is due here this week, which gives planters promise of a better market for their sugar, and a more direct means of obtaining western supplies—the traditional cause of impoverishment in the South

La Fourche Parish, La.—Weather unpropitiously warm, and many have stopped grinding. From what I can learn planters are disappointed in the yield.

St. Landry Parish, La.—Continued warm and wet weather has injured the crop.

St. Mary's Parish, La.—Plant cane is above average in quantity and quality, while the stubble cane is far below the average in quantity, due to the severe cold of last December.

Jefferson Parish, La.—Plant cane much better than last year; stubble not as good, injured by the cold weather of February last. The storm of October 3d damaged the crop by breaking the roots, and the warm weather has started the roots; no grinding yet.

Rapides Parish, La.—Quite unpromising, although the season thus far has been propitious. No frost up to date (November 9) to injure it. Grinding is being delayed as long as possible to give the plant time to improve. December 1, yielding very poorly; 500 pounds or less per acre. Best cane fit to be ground.

Gonzales County, Texas.—The culture of sugar cane is on the increase in this county.

Hardin County, Texas.—Cane good, but late. Should the frost be late will have a good crop.

Smith County, Texas.—Increased attention being paid to the culture of sugar-cane, the "Ribbon cane," so called. Sorghum is not so much grown as heretofore.

SORGHUM.

There has been an increase in the sorghum product of the country west of the Mississippi, but Wisconsin is the only State east of that river which does not report a decrease:

Cherokee County, N. C.—The cloudy, wet spell in August caused the sorghum to take something like rust or rot. This crop has failed for two years. The yield has been small and poor, and the molasses is dark with bad flavor. The stalks appeared to rot at the joints.

Kendall County, Texas.—Sorghum seems to luxuriate in a dry climate, as the yield comes up to an average, notwithstanding the drought.

Gonzales County, Texas.—Sorghum is raised in quantities sufficient to supply the home demand for molasses.

Williamson County, Texas.—Short, owing to drought.

Dallas County, Texas.—Sorghum dried up in the field. Drought.

Monroe County, Tenn.—Sorghum, black-seeded variety, utterly worthless; other varieties good for the season.

Carter County, Tenn.—Very inferior; little sweetness in it; made very poor molasses.

Boone County, W. Va.—Rust, or something of that nature, destroyed at least one-fourth of the sorghum.

Butler County, Ky.—All the black-seed sorghum rusted by the 15th of September. Some was worked into molasses; but a poor yield or poor quality is reported. The red-seed variety did not rust, and the yield is good.

Edmondson County, Ky.—The black-top sorghum took the rust this year and did not turn out well. Some fields not worth working. The red-top does somewhat better, but does not yield nearly so much molasses as usual.

Sangamon County, Ill.—Scarcely any sorghum grown this year.

Grundy County, Ill.—The crop has declined more than nine-tenths in the past seven years.

Lagrange County, Ind.—Sorghum is being laid aside, owing to the low prices of other sirups. Sorghum is worth only 40 cents.

Dubois County, Ind.—Sorghum was infested with a kind of plant louse, which produced rust and reduced the quantity of sap.

Posey County, Ind.—Not half a crop, owing to the drought. The juice is stronger than in the cane of last year.

Medina County, Ohio.—For some reason, the cultivation of sorghum has nearly ceased, which is to be regretted.

Floyd County, Iowa.—Sorghum is losing favor. But little planted now.

Hancock County, Iowa.—The sorghum business has been running down for three years past; but there is now more interest, and more will be raised next year.

Crawford County, Kans.—Increase in quantity 10 per cent.; in quality, 25 per cent.

Butler County, Kans.—Better than ever before.

RICE.

McIntosh County, Ga.—The rice crop on the Altamaha River will be reduced at least one-half by the freshet and bad weather.

Georgetown County, S. C.—Rice is the only crop for market in this county. Acreage in 1868, 12,143; in 1869, 16,100; in 1870, 15,133; and in 1871, 17,439. The crop has been harvested in bad condition; three-fourths of it was wet upon the stubble. The grain is soft and does not pound well, and requires 20 to 25 per cent. more than prime rice to the tierce of 600 pounds. Prime rough takes 19 to 21 bushels to the tierce. The crop of this county thus far requires 23 to 27 bushels to the tierce of clean rice. The aggregate product for market will be less than in 1869–'70.

APPLES, PEARS, ETC.

Androscoggin County, Me.—Apples and pears almost a failure. A good crop of grapes.

Coos County, N. H.—Grapes nearly ruined by frost.

Grafton County, N. H.—Apple crop almost an entire failure. Not one barrel of cider made this year where four were made last year.

Orange County, Vt.—One-fourth less than last, but the quality is good and prices much higher; nice winter apples selling as high as $4 50 per barrel.

Addison County, Vt.—The choice varieties, except the Delaware, did not ripen. Apples almost a failure. Pears never more abundant.

Norfolk County, Mass.—Grapes promised a very large crop; but hundreds of bushels have been destroyed by frost. Apples scarcely worth naming. Pears, large product; quality very good, especially near the sea-coast.

Suffolk County, Mass.—Apple crop a failure.

Bristol County, Mass.—Grapes have been unusually abundant. Apple crop very light.

Windham County, Conn.—Few apples and of inferior quality. Many orchards that yielded 150 bushels last year do not yield 10 bushels this year.

New London County, Conn.—Very small crop of apples and quality poor.

Hartford County, Conn.—Grapes better in quality and quantity than last year.

Albany County, N. Y.—Apples poor and rusty. Pears never better.

Ocean County, N. J.—The apple crop is a failure.

Warren County, N. J.—Generally almost a failure. A few orchards full and quality good.

Burlington County, N. J.—Some varieties of grapes did not ripen so well as usual, particularly the Isabella.

Lancaster County, Pa.—Apples, small crop; quality good; pears, crop large, quality good; grapes, small crop and inferior.

Lycoming County, Pa.—An average crop of grapes, but many were destroyed by early frost.

Baltimore County, Md.—Winter apples are rotting. The dry hot summer affected the crop very much. Grapes very good.

Culpeper County, Va.—Good crop of apples near the mountains; very poor in the valley.

Transylvania County, N. C.—Fruit almost a failure. Late spring frosts.

Henderson County, N. C.—Fruit crops, especially apples, which are an important product in this region, were curtailed by the severe frosts of early spring.

Gilmer County, Ga.—The apple crop is nearer a failure this year than in the past ten years.

Jackson County, Fla.—More attention is given to the culture of grapes; more wine made this year than usual.

Marion County, Ala.—The Scuppernong is attracting attention, and experiments in its culture have proved successful.

Winston County, Miss.—The apple crop was over an average, but rotted badly—nearly all the winter apples. Early apples only do well here.

Hancock County, Miss.—Extraordinary crop of Scuppernong grapes. The country along the Mississippi sea-coast is well adapted to fruit culture.

Falls County, Texas.—Great quantities of wild grapes—the Mustang, of which we make a very palatable wine.

Kendall County, Texas.—Farmers very busy making a good quality of wine from the native grapes which literally cover the hill-sides and valleys.

Gonzales County, Texas.—The culture of the grape and the manufacture of wine are receiving increased attention.

Laraca County, Texas.—Wild grapes abundant. A great deal of wine made this year A large income could be drawn from this industry properly conducted.

Gibson County, Tenn.—Apple crop reduced at least one-half.

Rutherford County, Tenn.—Grapes an entire failure, owing to late spring frosts, following an early-developed bloom.

Carter County, Tenn.—Apples almost an entire failure. Those that matured are of superior quality.

Brooke County, W. Va.—Lightest crop in fifteen years. Owing to the mild winter, insects were numerous, and apples dropped off.

Anderson County, Ky.—Fruit crop almost an entire failure.

Owen County, Ky.—Apple crop very fine.

Ohio County, Ky.—Apples are diseased to such an extent that the trees seem scarcely worth the ground they occupy.

Henderson County, Ky.—Apple crop large, but those ungathered are falling off; those gathered are rotting rapidly, attributable, probably, to the warm fall.

Cass County, Mo.—Grapes abundant. Some rot.

Platte County, Mo.—Much of the winter fruit blown off. Apples are becoming quite an item in Northwestern Missouri. Large quantities are being shipped to the far West. Worth $1 per bushel.

White County, Ill.—Apple crop short, owing to late frost.

Carroll County, Ill.—Apples have been a drug in the market. Early ripening will impair their keeping qualities.

Boone County, Ill.—Apples excellent in quality. A very large quantity made into cider.

Pulaski County, Ill.—The drought and heat caused winter apples to drop prematurely. The hardest year on winter apples within the recollection of our people. Scarcely any in the county, it being necessary to dispose of them early.

Floyd County, Ind.—Apple crop large, especially winter varieties.

Elkhart County, Ill.—Fruit of all kinds, except peaches, never more abundant. The apple crop will make up for the deficiency in peaches.

Noble County, Ind.—Apples abundant, but will not keep.

Dubois County, Ind.—Winter apples will nearly all rot by Christmas.

Coles County, Ind.—A full crop of apples in a portion of the county; in others none at all. A general tendency to rot.

Harrison County, Ind.—Apples an entire failure on all lowlands, owing to late spring frost.

Steuben County, Ind.—Large amount of fruit; quality unsurpassed; fruit culture fast becoming a specialty.

Gibson County, Ind.—Apples rotting badly.

Lagrange County, Ind.—A great crop of apples, worth $1 per barrel (without the barrel) at the railroad station.

Franklin County, Ind.—Apple crop on upland excessive; thousands of bushels left to rot; best winter fruit selling at 40 cents per bushel, delivered ten to twenty miles distant; cider $2 to $3 at the press, with scarcely any demand.

Defiance County, Ohio.—The frost caused winter apples to fall.

Medina County, Ohio.—Grapes abundant and cheap; pears never more abundant than during the present season.

Vinton County, Ohio.—Apples have rotted badly and fallen prematurely.

Morrow County, Ohio.—Grapes a drug in the market.

Wayne County, Ohio.—A large crop of grapes, but none except the Concords matured well.

Berrien County, Mich.—Grapes, apples, and pears abundant.

Van Buren County, Mich.—Grapes, apples, and pears never more abundant; apples rotting extensively; the dry weather has been hard on fruit, a sort of dry-rot prevailing on the inside, while the exterior is fair.

Cass County, Mich.—Apples 50 per cent. above any former crop; consequent largely upon growth of orchards; not keeping well; grapes abundant and good.

Calhoun County, Mich.—Grapes and pears very fine crops, but the drought materially affected ripening and the keeping properties of the fruit.

Waukesha County, Wis.—Unprecedented yield of apples; quality good.

Kenosha County, Wis.—Crop of apples unprecedented.

Rice County, Minn.—Apples have justified the most sanguine hopes; pears produced for the first time; all doubt as to the practicability of grape culture has been dissipated; the yield is fully ten times as large as in any former year; new vineyards have averaged 10 pounds to the vine; one vineyard of about 1¼ acres, second year in bearing, yielded about 3,000 pounds.

Goodhue County, Minn.—Season peculiarly favorable for grapes; many young apple orchards are beginning to bear, and the opinion obtains that Minnesota will yet be able to supply her people with this fruit.

Steele County, Minn.—Apples yielded finely on young orchards.

Muscatine County, Iowa.—Grapes too plentiful to be appreciated. Concord the leading variety. Apples more abundant than ever before, selling at 30 to 50 cents per bushel in the orchard. Pears more abundant than usual, ranging from $1 50 to $3 per bushel.

Floyd County, Iowa.—Apple crop fast increasing. Pears cannot be relied on here.

Harrison County, Iowa.—Many more grape-vines in bearing this year than last. Quality excellent.

Calhoun County, Iowa.—Apple-trees not quite so full as last year, but more trees in bearing.

Monroe County, Iowa.—Frost killed most of the apples and all of the pears.

Adams County, Iowa.—Apples and other fruit ripened well.

Mitchell County, Iowa.—Grapes good. Mostly Concord.

Crawford County, Kansas.—Fruit crop 25 per cent. short, and of inferior quality.

Douglas County, Kansas.—Grapes have averaged 4 to 5 cents per pound. Crop large.

Grant County, Oregon.—Apple crop increased 50 per cent. by young orchards coming into bearing.

Salt Lake County, Utah.—Apples almost a total failure. Peaches, apricots, plums, and pears have given fair crops, but quality very inferior. The past has been the driest season since the settlement of the Great Basin.

ORANGES.

Alachua County, Fla.—The orange crop, getting to be valuable in East and South Florida, was damaged by the excessive cold of last winter, and by the storm thrashing off the fruit.

Orange Mills, St. John's County, Fla.—The orange on the St. John's River will not average half a crop, thousands having been thrashed from the trees by high winds.

Jefferson Parish, La.—The orange crop will fall ten per cent. below that of last year.

BANANAS.

Manatee County, Fla.—Banana crop very promising.

PECAN-NUTS.

Jefferson Parish, La.—The crop of pecans will be 25 per cent. above that of last year.

Blanco County, Texas.—Very good crop; but the trees are scarce in this county.

San Antonio County, Texas.—The pecan-trees are breaking down with fruit. The crop will bring over $1,000,000 to this immediate section. The price is $2 50 per bushel.

PEANUTS.

Surry County, Va.—An excellent crop. It has become a staple crop here. It pays better than any other we cultivate, but is exhaustive.

Prince George County, Va.—With one exception, the best crop since 1865; 40 per cent. better than last year's crop.

James City County, Va.—Peanuts were a specialty in 1869 and 1870, but were found to be ruinous, and the crop has totally disappeared.

Beaufort County, N. J.—The peanut crop is becoming one of considerable importance in this county. Several hundred acres planted this year. One farmer near me will have 10,000 to 12,000 bushels. Average yield 40 to 50 bushels per acre.

Carteret County, N. C.—Good crop.

New Hanover County, N. J.—An average crop.

CRANBERRIES.

Hancock County, Me.—Severe and unusual frost early in September seriously injuring the cranberry crop.

Norfolk County, Mass.—A great many destroyed by frost. We have but few cultivated meadows.

Dukes County, Mass.—Far better crops than usual. From one acre 125 barrels have been picked, and many other acres have produced nearly as well.

Bristol County, Mass.—Injured by frost in September.

New London County, Conn.—Much larger crop than usual.

Camden County, N. J.—The promise of a full yield was flattering, until near the time for gathering, when the berries were badly scalded.

Princess Anne County Va.—Cranberries grow wild in the marshes. A full crop. Sell readily at $3 50 to $4 per bushel.

Pulaski County, Ind.—Almost an entire failure, owing to a frost in June, when the plants were in blossom.

Lake County, Ind.—The crop is larger than for many years, and of fine quality. The season has been particularly favorable.

Van Buren County, Mich.—Nearly all destroyed by the drought and the fires, which have been raging in nearly every large marsh.

Crow Wing County, Minn.—A marked decrease in the crop.

Tillamook County, Oregon.—Cranberries grow wild, but in places difficult to get at. We have a large extent of marsh-land fit for this culture.

FLAX.

Elkhart County, Ind.—Flax raised mostly for seed. Very fine. Lint not so good, being short.

Hamilton County, Ind.—Flax only raised for the seed.

Hancock County, Ind.—Flax was raised extensively in this county for a number of years, but the acreage is falling off each year. It is not considered very profitable.

Medina County, Ohio.—The cultivation of flax is on the increase in the southern tier of townships of this county.

Morrow County, Ohio.—A large crop.

Delaware County, Ohio.—The crop has exceeded expectations both in seed and straw. The yield will probably reach 50,000 bushels of seed on an acreage of about 4,500.

Louisa County, Iowa.—There has been shipped from Morning Sun 4,000 bushels of flax-seed, and there seems to be a lively interest taken in the business.

"MAST."

An extraordinary fruitage of forest trees is almost everywhere reported. In many sections this voluntary crop is relied upon for fattening hogs, more than upon any other fattening material, corn only excepted. The following items will illustrate the general abundance:

Surry County, Va.—Fine mast; hogs nearly fat without corn; pork will be cheap.

Hertford County, N. C.—Fine acorn mast, which, with the large corn crop, will enable farmers to fatten their pork with light expense.

Rockingham County, N. C.—The crop of acorns is as great as ever known, and the few hogs we have will fatten upon them.

Cherokee County, N. C.—Hogs are now about as fat from the mast as bacon-hogs were last year from corn. The mast will probably keep them till June. One hand has picked up as high as one and a half bushel of chestnuts a day for market.

Tallapoosa County, Ala.—Good mast crop; hogs doing well.

Tishemingo County, Miss.—More acorns and more hogs in this county this year than in any year since the war.

Grayson County, Texas.—Best crop of acorns of the post-oak and of hickory-nuts in twelve years. There will be plenty till spoiled by spring.

Coryell County, Texas.—Very fine; most of pecan, bur, and post-oak, and black-jack.

Falls County, Texas.—Very fine mast, which will compensate in a measure for the short corn crop.

Prairie County, Ark.—Exceedingly heavy mast; sufficient to feed all the cattle and hogs in the State.

Craighard County, Ark.—The corn crop will be improved 25 per cent. by the acorn mast.

Union County, Tenn.—Heaviest mast ever known in this county; will make up for the deficiency in corn.

Fentress County, Tenn.—The quantity of corn needed will be far less than usual, as the hogs are fattening upon acorns.

Wakeley County, Tenn.—Hogs tolerably plenty, and getting fat on the mast. Pork-buyers are offering 5 cents per pound.

Campbell County, Tenn.—Best mast in forty years. Hogs will get quite fat on the acorns, and stock-hogs will do well without feeding up to next harvest.

Boone County, W. Va.—The deficiency in corn crop is fully met by the abundant mast. Hogs are getting fat, and stock-hogs will do well without feeding until June.

Jackson County, Ky.—Acorns enough to fatten our winter hogs.

Clay County, Mo.—Hogs go off the mast to the fattening pens in good condition.

Williamson County, Ill.—Corn is deficient 20 per cent., but it is thought to be more than made up by the abundance of acorns and hickory-nuts.

Washington County, Iowa.—Mast abundant. Hogs doing well upon it.

Owen County, Ind.—Much corn saved by the heavy mast.

Table showing the condition of the crops, &c., on the 1st day of November, 1871.

STATES.	CORN.		Potatoes, (*Solanum tuberosum,*) product compared with last year.	Potatoes, (*Solanum tuberosum,*) average quality compared with last year.	Potatoes, (*Batatas edulis,*) sweet, product compared with last year.	Potatoes, (*Batatas edulis,*) sweet, average quality compared with last year.	TOBACCO.		HAY.		Beans, product compared with last year.	Peas, product compared with last year.	Buckwheat, product compared with last year.	Flax, product compared with last year.	COTTON.		Sorghum, product compared with last year.	Sugar-cane, (not sorghum,) product compared with last year.	Grapes, product compared with an average crop.	Apples, product compared with an average crop.	Pears, product compared with an average crop.	Cranberries, product compared with an average crop.
	Product compared with last year.	Average quality compared with last year.					Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.					Indicated product compared with last year.	Indicated product, (lint,) per acre, in pounds.						
Maine	87	92	112	98	.....	.....	.....	.....	80	103	87	98	90	.....	.....	.....	.....	.....	107	65	87	97
N. Hampshire	105	96	127	107	.....	.....	.....	.....	85	94	94	99	103	.....	.....	.....	.....	.....	95	40	118	101
Vermont	91	85	110	99	.....	.....	.....	.....	92	100	93	100	88	.....	.....	.....	.....	.....	76	75	110	.....
Massachusetts	109	100	126	108	.....	.....	126	121	78	104	97	100	99	.....	.....	.....	.....	.....	93	37	106	102
Rhode Island	110	100	125	103	.....	.....	.....	.....	90	100	115	112	.....	.....	.....	.....	.....	.....	141	46	110	100
Connecticut	117	102	115	112	.....	.....	115	104	95	103	110	107	100	.....	.....	.....	.....	.....	122	42	112	113
New York	90	91	102	105	.....	.....	99	97	94	100	98	101	86	104	.....	.....	.....	.....	103	56	106	92
New Jersey	108	97	120	101	91	91	.....	.....	73	92	93	100	80	.....	.....	.....	75	.....	109	43	106	78
Pennsylvania	101	98	109	106	105	100	107	101	75	98	99	100	83	98	.....	.....	83	.....	100	69	79	100
Delaware	110	105	120	110	100	96	.....	.....	90	100	100	150	87	100	.....	.....	83	.....	105	53	105	.....
Maryland	95	96	85	96	80	94	86	110	75	96	88	87	81	.....	.....	.....	91	.....	96	73	99	.....
Virginia	102	103	97	95	103	101	90	96	85	95	92	104	75	65	91	172	85	.....	100	69	90	.....
North Carolina	99	98	97	100	86	91	91	90	92	96	89	93	75	94	80	143	70	.....	91	45	67	87
South Carolina	100	96	97	99	93	96	.....	.....	105	100	95	90	.....	.....	68	117	83	105	83	74	77	.....
Georgia	85	95	107	101	98	97	94	97	116	102	89	87	.....	.....	67	120	78	103	72	71	85	.....
Florida	90	88	97	95	100	98	.....	.....	.....	.....	100	82	.....	.....	58	85	97	100	102	.....	90	.....
Alabama	86	88	96	100	89	94	84	93	106	100	96	103	.....	.....	73	130	88	113	98	78	87	.....
Mississippi	90	88	98	102	90	90	95	102	112	113	90	75	.....	.....	72	150	98	87	115	84	93	.....
Louisiana	75	90	90	96	92	95	.....	.....	105	100	67	87	.....	.....	65	150	.....	104	105	90	93	.....
Texas	90	95	92	95	61	84	94	103	81	86	85	75	.....	.....	68	180	70	98	107	107	110	.....
Arkansas	95	90	90	95	105	98	129	101	124	102	90	105	.....	.....	85	215	130	.....	91	82	89	.....
Tennessee	93	98	85	91	93	96	90	96	96	102	91	101	76	94	90	180	87	.....	81	49	68	.....
West Virginia	95	99	96	100	97	99	95	98	80	97	97	99	79	96	.....	.....	84	.....	101	68	84	.....
Kentucky	85	95	80	88	92	97	80	100	86	95	81	82	93	94	.....	.....	80	.....	58	37	57	.....
Missouri	110	107	80	94	98	100	100	104	108	103	97	96	96	98	98	160	98	.....	109	103	92	.....
Illinois	101	93	65	89	93	96	119	94	97	99	93	91	74	93	.....	.....	86	.....	115	102	103	.....
Indiana	90	93	85	96	103	99	92	97	90	102	97	97	81	112	.....	.....	91	.....	108	103	92	66
Ohio	102	99	104	103	100	101	103	105	95	103	98	99	79	103	.....	.....	89	.....	106	83	92	95
Michigan	85	92	66	91	.....	.....	98	100	75	103	102	95	71	.....	.....	.....	76	.....	113	97	106	90
Wisconsin	107	105	120	114	.....	.....	112	105	110	108	99	101	84	133	.....	.....	139	.....	128	147	116	103
Minnesota	116	108	137	149	.....	.....	.....	.....	110	110	97	99	87	149	.....	.....	102	.....	222	188	.....	87
Iowa	123	107	120	112	101	100	115	113	106	105	102	103	94	86	.....	.....	110	.....	125	110	112	.....
Kansas	148	112	124	103	124	115	113	100	135	116	110	103	104	.....	.....	.....	115	.....	118	107	101	.....
Nebraska	140	111	120	98	123	107	.....	.....	117	110	115	113	134	.....	.....	.....	113	.....	115	63	58	.....
California	98	96	87	96	101	92	100	100	87	98	85	85	.....	.....	.....	.....	100	.....	100	91	92	.....
Oregon	97	102	94	102	.....	.....	75	100	96	97	94	98	98	.....	.....	.....	.....	.....	111	120	118	.....

EXTRACTS FROM REGULAR CORRESPONDENTS.

THE EGYPTIAN COTTON.

Stanly County, N. C.—The bolls of the Egyptian cotton begin to open freely. Up to October 18, we had no killing frost, and the plants kept growing, yet displaying their ample green foliage, yellow blossoms, and profusion of green bolls. The seed was received rather late for planting, the common sorts having already made a fine start. I had seed sufficient for 1,600 hills, three in a hill. Sixteen rows, 100 yards long, one yard apart, were prepared by thorough plowing and right manuring, in rows, with well decomposed stable manure. The whole occupied a fraction over one-third of an acre. The land is sandy loam, on a gentle slope well exposed to the sun. In about 100 hills the seed failed to vegetate, and in most instances but one or two came up. When three came up only one was left for a stand; the one stalk in the hill was universally the thriftiest, some stalks being over an inch in diameter. During the whole season the vegetation was uninterrupted; the foliage remained fresh when everything around was drooping from drought. On the other hand, the middle of September came on and few bolls were opening, while ordinary cotton was nearly all gathered in. The plants are now covered with green bolls from top to bottom. There are no plants under three feet high; some are five to six; all branching so as to meet across the rows. The stalks average not less than 50 bolls, and many stalks have over 150. Estimating one pound to 100 bolls (the common varieties yield more) the 1,500 hills in which the seeds vegetated, if all the bolls were to open, would yield 700 to 800 pounds of seed-cotton, or about 2,400 pounds to the acre. Earlier planting may insure the maturity of a full crop next year. For a further trial seeds from the earliest bolls have been saved.

Duplin County, N. C.—The Egyptian cotton has grown to an enormous height, some of the stalks measuring 12 feet, but has failed to produce much cotton, not more than one-fourth the yield of ordinary cotton on the same land. The staple is very beautiful, very long and very fine; far surpassing the Peeler, Moina, or any other of the long-staple upland varieties. I think our seasons are too short for it to succeed here.

Greene County, N. C.—The Egyptian seed came up well and grew finely, to almost double the size of common cotton by its side, but bloomed fifteen days later than the latter. The bolls were about one-fourth the usual size; the lint not as white as it should be; the yield about one-third that of the common. The rust or blight did not make its appearance on the Egyptian, while it almost killed the row of the common next to it. It will not suit our climate.

Craven County, N. C.—I Think the Egyptian cotton will not be profitable here unless it will sell for at least 50 per cent. more than ordinary cotton. The weed grows large; bolls small and scattering; staple short, but fine and glossy.

Hertford County, N. C.—The Egyptian cotton bolls well, but the bolls are so small and so late in maturing that it is unsuited to this climate.

Perquimans County, N. C.—Too late for this climate; does not mature well and is not productive, though the staple is much longer and finer than that of our common cotton. The bolls have but three lobes, while our cotton has four, and sometimes five.

Barnwell County, S. C.—The Egyptian cotton-seed sent me is a black or clean seed variety, which is not adapted to this county, situated in

the "uplands." We are careful to keep all black seed out of our cotton, but they will appear as the pure seed degenerates. I tested the Egyptian on good land and with the best of culture. It will yield 250 to 300 pounds of seed-cotton, while the common Prolific will yield 800 to 1,000, while I think the price would be no more, prepared for market in the ordinary way. The "Moina," an upland long-staple variety, as fine as the Egyptian and twice as prolific, was abandoned because there was so little difference in the price of that and the common Prolific, which yields 50 per cent. more. The bolls of the Egyptian have but three lobes; those of the common Prolific have four, and about one-third will be found with five.

Georgetown County, S. C.—The Egyptian cotton-seed was carefully cultivated in the same field with Carolina varieties. It grew well; yellow blossoms, good stalks, but small bolls, and late in maturing. It possesses no advantages for this region.

Wilkes County, Ga.—A decided failure thus far; a fine weed is the only product; some fine stalks without a single boll; seed from this year's crop may produce better results. It is becoming an accepted fact that we generally plant too early. When cotton is planted very early the crop is entirely at the mercy of the inevitable summer drought, which has comparatively little effect on later plantings.

Wilkinson County, Ga.—Will not answer for this section. Bolls small and scattering; lint good, but not worth bothering with.

McDuffie County, Ga.—A failure in this climate. It will not yield 20 pounds of lint per acre on land that would produce 400 pounds of the Prolific.

Murray County, Ga.—A fine weed, but few bolls, and they are inferior. Not suitable to this climate.

Clayton County, Ga.—Does not suit our climate.

Bolivar County, Miss.—I had the Egyptian cotton-seed planted, but did not give it enough space in the drill, which makes it grow too tall, (some growing 12 feet high,) with poor branches. I think if it was checked four feet each way, it would produce well, and not grow so tall, and have more branches. I sent a sample to a few cotton merchants in New Orleans and Memphis. They say it is very fine, but that it cannot be ginned on our common gins, as they cut the lint badly.

Winston County, Miss.—I planted the Egyptian cotton about the 15th of April, on the same kind of ground on which our ordinary seed was planted, without manure. The summer and fall have been very dry. The stalks grew very tall and are full of bolls, but it is at least three weeks later than our common cotton. The bolls cannot mature, as they are now quite green, and some of them quite small.

Washington County, Miss.—The Egyptian cotton has proved a failure. The stalk is very large, but it has not bolled well, and as yet but few of the bolls are open. I think it will not yield over one-twentieth of a good, ordinary crop on the same ground.

Clark County, Miss.—Will not answer for this climate; summers not long enough. It stands dry weather well, and is still green and blooming, while the common cotton is yellow and almost entirely shed.

Coahoma County, Miss.—A failure here. But few bolls have matured.

Lawrence County, Ala.—The Egyptian cotton I find to be a vigorous, thrifty plant, free from rust and the boll-worm this season; but it is much later than the green seed-cotton—too late for this climate. The first boll opened 25th September, and the yield is not above second-rate green seed, say 500 pounds seed-cotton to the acre. It may, however, produce some valuable hybrids with the early green seed.

Clarke County, Ala.—Not nearly so prolific as our common native cotton.

Calhoun County, Ala.—A failure here. Bolls small and few in number. Too late.

Lafayette County, Ark.—The Egyptian cotton proves hardy, thrifty, bolls well, resists drought, escapes the worms, and yields an abundant staple, fine, long, and silky.

Bastrop, La.—Opinions differ in regard to the *Tumel maki* or Egyptian cotton. It has not been fairly tested yet, and will be tried again next year. Some of the seed was planted too late. The weed or stalk grows large before it commences to make, but it makes rapidly, and grows and makes in the dryest season, when other cotton ceases to grow and sheds its bolls. It is also the last to be attacked by the cotton-worm, and the caterpillar did not touch it this year for two weeks after it had riddled the cotton fields. I have seen a small patch which will yield at the rate of 1½ bales to the acre. If planted early it must make a fine crop. It requires a long season for full maturity, however. There is a stalk of this cotton near here 14 feet high and 22 feet across from tip to tip of limb. This variety would probably succeed better in the more southern part of the State, where the season is longer. As a cotton for hand-spinning it has no equal that we have ever known. It requires no preparation; the spinning goes on without the breaking of a thread, even upon the old-time spinning-wheel.

Rapides Parish, La.—The Egyptian cotton-seed, from the one trial, seems to possess no real value. The growth was luxuriant, the leaves a dark, rich green, the flowers yellow or a rich straw-color, but the forms and bolls are too far apart, averaging 6 to 10 inches, whereas on Boyd, Prolific, and Dixson, they are usually two to four inches, with the top branches short, and hence less likely to break under the weight of bolls during a storm.

THE CHINESE COTTON.

Laconia, Harrison County, Ind.—The quart of the China cotton-seed received was divided with two neighbors, for the purpose of testing its adaptability to different kinds of soil. My own portion was planted May 13, on upland, dry soil, at an elevation of about 150 feet above the Ohio River, and about one-fourth of a mile from it; elevation above the sea, 500 feet; soil, a clay loam, with limestone formation. Only about half the seed germinated, and scarcely a single stalk came to maturity. The season was long enough, and the failure seemed to be due entirely to local causes. I shall repeat the experiment. A neighbor was more successful. His location and soil are similar to mine, though the soil in the spring was not quite so dry. His crop matured fully. Stalks, blossoms, and bolls very small. The yield per acre not one-half that of ordinary Tennessee cotton. The fiber is short and rather inferior. He has had experience in raising cotton in Tennessee, and he is of opinion that this variety could not be made profitable, unless the yield should be much better than given in this trial.

OATS.

Essex County, N. Y.—From one pound six ounces of Schonen oats, received from the Department, I have raised 7¾ measured bushels on 12 square rods of ground. The land is river bottom, manured, and cultivated last year in corn. No fertilizer this year. Land prepared for wheat in the spring. The ground was raked off with a hand-rake and

the oats sowed in drills 14 inches apart. When the oats were 8 to 10 inches high the weeds were hoed out of the spaces between the drills with a hand-hoe; the oats grew 6 feet high, with large healthy stalks, which stood up well until the crop began to ripen, when the whole was prostrated by rain and wind and did not rise. The product weighed 235 pounds—a little below the standard in weight. If not blown down the yield might have been a bushel or two more. From the above result, would it not pay to sow our grain crops in drills and hoe them?

Gilmer County, Ga.—A package of the Schonen oats, sown March 10, on low wet soil, and, though somewhat damaged by rust, the yield was very good, while other varieties were almost a total failure. I have great hope that this variety will do well with us.

Blanco County, Texas.—Sowed three pounds of Schonen oats March 24, on one-eighth of an acre. No fertilizer used. Yield 5 bushels, weighing 52 pounds to the bushel. I think one more rain would have doubled the yield.

Marengo County, Ala.—Last season I distributed the Excelsior oats, and grew some myself, and in every case they grew well, much taller and more luxuriant than the common oats, but rusted so badly that we did not save a seed. The only oats that do not rust here are the red oats, introduced since the war. I would like to know the proper name and the history of this variety. It seems to be really a non-rusting oats. This grain will hold its own in southern agriculture, being more valuable, all things considered, than even Indian corn. Put in properly, at this season of the year, I think it pays better for the labor bestowed upon it than any other crop we raise, and its extended and successful growth will mark a new era in our agricultural advancement.

THE PERUVIAN CORN.

Haywood County, N. C.—The corn from Peru made a large flourishing growth, but did not mature.

JUTE.

Charleston, S. C.—Last season I received from the Department some jute seed, which I planted at Summerville, twenty-two miles from this city. The seed was not planted until June 10, and was on very poor land, but by October 1 the plant had attained a height of six feet. This fully demonstrated to me that the cultivation of this fibrous plant can be a success in the South. I have preserved seed, and will plant it next March for a further test.

GRAPES IN ALABAMA.

Lawrence County, Ala.—About three years ago I received from the Agricultural Department several specimens of grape-vines for experiment. Those that have lived and borne fruit this year are as follows:

1. *Rogers, No.* 15.—This vine is rather a slow grower, but stout, and stands the winter like a native. The fruit is pale red; berry large and round, sweet and luscious; bunches equal to the Catawba in size and number of berries. This is the first year that it has borne fruit with me. It was quite free from mildew, and ripened from the first to the middle of August. I thoroughly sprinkled it with sulphur from the first show of the bloom till the end of May. This is a most excellent grape for this region.

2. *Hartford Prolific.*—This is now a well-known grape. It is a strong, thrifty vine, and an abundant bearer. Under the sulphur treatment, as above, it wholly escaped the mildew. It is a very early grape; ripens early in July.

3. *Creveling.*—This grape much resembles the Clinton, with larger berries, sweet and juicy. It ripens shortly after the Hartford Prolific, and, with the sulphur treatment, was this year quite free from mildew—the great pest of all grapes here except the Scuppernong.

PRODUCTS OF SONOMA, CALIFORNIA.

Sonoma County, Cal.—The chief products of Sonoma County, California, are wheat, corn, barley, oats, potatoes, and all the varieties of fruits grown in a semi-tropical climate. The grape is cultivated very extensively for wine and table purposes, and will eventually constitute the chief product of the county. The variety known as the Mission or Native grape is chiefly grown for wine-making, but all the foreign varieties yield equally well, and seem to be adapted to the climate. Price paid by wine makers to the farmers from three-quarters to one cent per pound, delivered at the press. In that portion of the county contiguous to the sea-coast, where, in consequence of the prevailing heavy fogs, the grass does not entirely dry, the dairy business is chiefly carried on, yielding handsome returns to those engaged in it. Potatoes are also extensively cultivated there, but for want of rotation of crops the yield has decreased and the quality deteriorated, causing farmers to abandon their cultivation and turn their attention and farms to the more profitable business of the dairy, which, however, is confined to the making of butter, which meets with ready sale in the San Francisco market at from 30 to 75 cents per pound. The yield of wheat has been very large this year in Sonoma County, considering the fact that in the greater portion of the State the wheat crop has been an almost entire failure for want of moisture. The several valleys in the county yielded as follows: Dry Creek, 42 bushels per acre; Russian, 38; Santa Rosa, 35; Sonoma, 34.40; other small localities equal to 35; making the average yield for the county 37.35. Average price paid per bushel, $1 44; many farmers realized $1 65.

Hops were at one time profitably cultivated in this county, but the prices having declined to 10 to 12 cents per pound, growers found that they could cultivate more profiable crops, and nearly all the growers plowed up their yards, and abandoned their cultivation. The fruit crop, peaches, apples, pears, &c., has been unusually light this year, owing to the prevailing north winds at the time the fruit was in blossom and while forming. From the same causes the quality is not as good as it is generally.

WOOL IN MENDOCINO, CALIFORNIA.

Mendocino County, Cal.—One of the most important items of interest in this county is wool, the fall clip of which is just now going to market. This business is rapidly growing in importance, and the experiment has met with great success. The fall clip this year is largely in excess of that of any former year; in fact, is nearly equal to last spring's clip in quantity. Not that sheep will produce an equal clip in the fall to the spring clip, but owing to the large number of spring lambs that yield their first fleece in the fall.

BUTTER AND CHEESE.

Outagamie County, Wis.—Not one-fourth the quantity of butter and cheese made in this county in September and October that was made in the same months last year.

Trumbull County, Ohio.—The season will compare fully with last year, for dairy products. Nearly all the milk worked up by factories. The prices during the fore part of the season were very low, but later prices have ruled much better, and the most of the August, September, and October cheese has been sold at remunerative rates.

FODDER IN THE SOUTH.

Gladsden County, Fla.—Permit me to call attention to the fact that neither in the last census report, nor in the forms for the Agricultural Reports, is there a column for the noting of the "fodder" crop. The blade of the corn designated as "fodder" is our chief dependence for long forage, supplying the place of "hay" in all of the South Atlantic and Gulf States, and deserves some notice in making up the aggregate value of southern products. An approximation to the amount and value of this crop may be had by allowing 1,000 pounds of "fodder" for every 80 bushels of corn, and valuing it at $12 50 per thousand.

CLOVER IN GEORGIA.

Wilkes County, Ga.—Quite an increase in clover-sowing. We look upon its culture as a decided success. I cut two tons from an acre at one time.

One of the most profitable lots I have is seeded with yellow or Chilian clover; now up and on good ground; gives good grazing by middle of January; dies in June; seeds itself no matter how closely grazed, and comes up again during the rainy season in late summer. Seed from Patent Office between 1856 and 1860.

CLOVER IN NANSEMOND COUNTY, VIRGINIA.

A correspondent at Suffolk, Virginia, writes: Much of our land produces clover well, and at present I have 16 acres, a part of which cut two tons to the acre last summer. We find that oats, (winter,) sown either in the fall months or in January, yield much better than the spring oats. Some of my neighbors have done well with spring wheat. I have prepared a plat of five acres, clover-sod turned under in November, on which I desire to seed with several kinds of wheat and oats, with and without fertilizers; (bones, 100 pounds; guano, 100 pounds; salt, 10 pounds, per acre, and two bushels of plaster on growing crop.)

DEPRECIATION OF SUGAR-CANE.

Liberty County, Fla.—Your attention is called to the depreciation of the sugar-cane. It has been planted here so long that it has become almost as hard as a hickory sapling, and contains but little saccharine matter. We see Congress making liberal appropriations for everything but the Agricultural Department; this is always stinted. It is the cultivation of the soil that makes a nation prosperous. Why, then, cannot a small appropriation be made to introduce a few ship-loads of African cane, to reinstate the planters in profitable seed? This would increase the crop in five years 25 per cent.

THE QUALITY OF FERTILIZERS.

Kershaw County, S. C.—I know no boon to the cotton-planter which would be so great as the promulgation of some method by which the unscientific planter could test his fertilizers as to percentage of *soluble matter*, or, better still, a law of Congress requiring manipulators of fertilizers to truly label the quantity and nature of ingredients on each parcel, with a sufficient penalty to prevent frauds.

WHEAT IN RUSK COUNTY, TEXAS.

Rusk County, Texas.—I am satisfied that the sandy lands in this vicinity do not suit wheat. I have tried for four years to raise it, and have abandoned it altogether. I tried the Deihl and Mediterranean; they both rusted and made nothing. The Tappahannock did quite well two years, and last fall I planted three acres, but it rusted so badly this spring that it was not worth cutting.

OVERCUP OAK.

Prairie County, Ark.—There will be plenty of "overcup" to keep hogs until next fall. The overcup oak is a species of the white oak, which grows exclusively upon overflowed lands. The timber is better than any other variety of white oak. The acorn is entirely covered with a thick hull; it floats in the water, and is drifted in great heaps, sometimes containing many wagon-loads. The fruit is nearly as pleasant to the taste as the chincapin. This oak should not be confounded with the overcup or burr oak of Kentucky, which is here called cow oak.

CROPS IN UTAH.

Sevier County, Utah.—This county having been farmed but one season, no comparison can be made with former years. Estimated product: wheat, 5,000 bushels; oats, 2,000 bushels; barley, 500 bushels; potatoes, 1,000 bushels.

GOOD STOCK PROFITABLE.

Giles County, Tenn.—I have recently sold 20 head of horses, mares, colts, and fillies, at from $300 to $3,366 a head. If all the stock of the county were the best of its kind, how much wealth would be added to individuals and to the country!

BEAR GRASS.

☞ *Cherokee County, Texas.*—I have growing in my field a plant which I have seen only in Florida and Texas. The common name is bear grass, (*Yueca filamentosa.*) The leaves are 2 to 3½ feet long, one-half to one and a half inch wide, very strong and tough, and when wilted by immersion in boiling water a moment are very pliable. They are the best thing I ever saw for tying grape-vines, fruit-trees, hanging meat, &c. The flower is magnificent, growing on a stalk 4 to 10 feet high, and 2½ to 3 inches in diameter; white or light cream color, like wax, and 500 to 1,000 on each stalk. It will grow in the poorest white sand, and will stand heavy freezing any length of time. The root and leaves are perennial, but the flower-stalk comes from the root each year, something

like the banana. The seed-vessel resembles the banana in shape, having, when ripe, a little pulp around the seeds, which is also like the banana in taste, but of a dark brown color.

CULTIVATED GRASSES IN TENNESSEE.

Wilson County, Tennessee.—Our farmers are paying more attention to the grasses, and are rapidly increasing the quantity of both pasturage and hay. For the former they prefer blue grass, orchard grass, and clover; for the latter, timothy, redtop, and clover. Timothy is universally preferred.

GRAPES.

Orange County, Va.—Some new enterprises are being entertained in this section, among which grape culture is most prominent and thus far successful. It promises to be progressive, and we expect wine-making to become one of the institutions of the county.

Carteret County, N. C.—All varieties of the grape, except the Scuppernong family, have generally failed from the effects of mildew. The Delaware, Iona, Concord, and Walter, as far as our observation extends, are the best of the soft-wood varieties for this climate. The culture of the soft-wood grape in this county is quite recent, however. The Scuppernongs have been cultivated more or less for a number of years, but have received more attention of late, and we are generally sure of a good yield in quantity and quality, with much less expense than with other grapes.

Craven County, N. C.—Grapes will be an important product with us in a few years. Large vineyards have been planted, and are coming into bearing.

SILK CULTURE IN TEXAS.

Gonzales County, Texas.—At our recent fair there was on exhibition a skein of beautiful silk, manufactured in this county from the raw material produced here. This encourages us to hope that this industry, with proper attention, may prove a source of revenue.

EARLY APPLES IN VIRGINIA.

Prince George County, Virginia.—Large orchards of early apples are being planted, as there is quite a brisk demand for such fruit for the New York markets.

GINSENG.

Cherokee County, N. C.—From 80,000 to 100,000 pounds of ginseng have been dug from the mountains this fall and sold at 25 to 27½ cents per pound.

CHICCORY.

Tillamook County, Oreg.—A little chiccory has been grown here this year. It does remarkably well.

WOOL IN CALIFORNIA.

Alameda County, Cal.—The fall clip of wool is about all in market, but sales have been light. Several of the extensive wool-houses and manufacturers in the Eastern States have sent their agents to Australia to purchase wools, some of which are being sent forward to New York

and Boston, via San Francisco. These wools will come strongly in competition with the finer grades of wool grown in the United States, and will be a great detriment to the producers of that class of wool.

DROUGHT AND FIRE.

Gratiot County, Mich.—The late fires swept over our country, destroying fodder, crops, and fences, and, in some instances, houses and barns, but I think no lives were lost. Hay has been destroyed to such an extent that the price has gone up at least one-third, and before next spring hay will bring $25 per ton, at least 100 per cent. higher than it was before the fire.

Mecosta County, Mich.—With the exception of one or two light showers about the 1st of September, we have had no rain since the 20th ot July, till the middle of October. We are now having an abundance. The fires, which have devastated so much territory north and west, swept through the forests here generally, but did not kill much timber, and did but little damage in the county.

Wayne County, Mich.—The drought continued until last evening, when we had a fine rain. Much of the wheat sown in September has not yet come up. Pastures are nearly all dried up, and stock has to be foddered as in the winter. There has been much suffering among the stock from want of water, many farmers being obliged to drive their stock from three to five miles to water.

Livingston County, Mich.—The drought is unprecedented. No rain to amount to anything since the last of June. Pastures, even on low lands, are completely dried up, and much of the corn-fodder is already fed out. Scarcely any wheat sown on summer fallows, and much of the seed sown is lost. Many fires yet burning in swamps and marshes.

Ingham County, Mich.—This county, more favored than some others in the State, has suffered considerably from drought and fire. Pastures are short, and wells and watering places dry. Fences have been consumed and timber burned, notwithstanding the zealous efforts of the citizens to save them. But a plentiful rain on the last day of August has for the present put a quietus upon the ravages of fire.

Juneau County, Wis.—The hay crop was large, but the late fires destroyed hundreds of tons, which will cause considerable scarcity of fodder in this vicinity.

Outagamie County, Wis.—One hundred stacks of hay reported burned by the late fire on Rat River Marsh. Stacks would average, perhaps, three tons each. In many localities the soil has been burned to the depth of two feet. A great quantity of valuable timber and fences have been destroyed. It has been a terrible month for Northern Wisconsin on account of fire. Rain has finally put a stop to our troubles. For nearly a month work of all kinds has been neglected on account of fighting fire.

Defiance County, Ohio.—The woods are all on fire, the swales are entirely dry, and much good timber is ruined by fire.

Morgan County, Ohio.—October the driest for ten years; water very scarce; several heavy frosts; no snow, and but one small shower of rain. Ice the 29th.

Gibson County, Ind.—In some parts of our county water is very scarce. Some hauling for stock two to four miles.

Vanderburgh County, Ind.—The dryest fall, up to the 20th of October, known in this county for twenty years. But little rain since the middle of August, to within about the 20th instant.

Grant County, Ind.—The dryest time experienced since our county was settled.

Perry County, Ill.—The season has been dry without precedent. Showers have fallen in some parts of this county sufficient to insure reasonable or nearly average crops of corn, potatoes, &c., but we have had no general rain sufficient to wet the ground thoroughly, since first week in March last.

Wright County, Minn.—The fall season has been very dry. Fires have run over large tracts of land, destroying buildings, crops, and even lives. Much suffering will be experienced on the frontier during the coming winter.

Meeker County, Minn.—A large amount of hay has been destroyed by fires, and should the winter be severe must occasion scarcity of hay.

Franklin County, Mo.—Drought continued until October 9. Much destruction by fire in consequence thereof.

Marion County, Iowa.—Weather extremely dry, and very pleasant. Most farmers are feeding their stock now, in consequence of short pasturage. Water lower than ever known since the county was settled. Many farmers have much difficulty and great inconvenience in procuring water for their stock.

Nemaha County, Kans.—This fall has been very dry and windy, and with a heavy coat of dry grass on the prairies, much loss has been sustained by fires. One thousand tons of hay, many miles of fences, 500 bushels of corn, grain in the stacks, stables, and three houses have been burned; about one-third of the prairie in this county has been burned over, and night is luminous with fires in every direction.

Cowley County, Kans.—Near 1,000 tons of hay have been destroyed by the extensive prairie fires which have raged among us this fall. Was very dry until October 30, when some 4 inches of rain fell.

Sedgwick County, Kans.—Corn is the main crop, mostly on prairie sod. Much hay has been destroyed by prairie fires, ranging from one small stack to 600 tons in a yard. The largest portion of the prairie is burned over. It appears that some are determined to drive all the cattle out of the county.

Gage County, Nebr.—Large amount of hay, grain, and some stock burned through this section by prairie fire.

Hall County, Nebr.—Prairie fires are raging in every direction, but no lives have been lost yet; a considerable amount of property has been destroyed by those fires, and a great many farmers have been compelled to take home their cattle from the herds, on account of the prairies being burned about four weeks too early, the 15th of November being the date when cattle are usually taken from their pasturing-grounds.

San Bernardino County, Cal.—The heated term continues, and no rain yet, the thermometer averaging 95° for the month of October so far, and what the grasshoppers left the heat has parched up. No feed of any amount in the valleys for months, and the mountain range, for the first time since the county was settled by a white population, is completely eaten up, and unless rain comes within four or five weeks, dead cattle and sheep will literally strew the plains by thousands.

Yankton County, Dak.—Only two light showers since July; consequently have suffered great damage by prairie fires.

DISEASES OF STOCK.

Clarke County, Va.—A disease, improperly called hog-cholera, has prevailed in this vicinity to a very fatal extent, from early spring to the

1st of September. I am safe in saying that one-third of the hogs in the county have died with it, and more than one-half in particular districts. I said it was improperly called cholera, because in no stage of the disease is there any excessive discharge from the bowels until just before death, and not then except in chronic cases. The great majority die upon the third or fourth day of the attack with all the symptoms of pneumonia. This has been confirmed by post mortem examinations, and when they do recover there has been obstinate constipation of the bowels throughout the disease. I have now two hogs which have recovered from it; one had a great many tumors upon his legs and feet, which did not suppurate, but remained for a long time; blindness from opacity of the cornea and total loss of the hair from the body were also symptoms in this case. This hog has recovered his eye-sight, but his eyes have changed to an intense black from a chestnut-brown color. The treatment found most successful, in the absence of apples, is calomel in twenty-grain doses for the first two or three days. But there is no longer any doubt in this community that an apple-orchard will both prevent and aid in the cure of the disease. After losing one-half of my hogs, the remainder (seventeen) were turned into an orchard, and not one took the disease, and two that were sick recovered. This is also the experience of others. It has been most confidently asserted that hog-cholera will be cured by feeding parched corn.

Montgomery County, Iowa.—Hog-cholera has made its appearance in a few localities.

Fort Randall, Todd County, Dak.—An outbreak of "splenic or periodic fever," among beef-cattle, (about 200 head,) at this post commenced in May, 1871, when ten deaths occurred; in June, six; in July, ten; in August, twenty-two, and in September, three. The epidemic reached its acme about the middle of July. The total number of deaths in 200 head of cattle was 51. Mode of invasion, rapidity of course of disease, and death occurring at an early period, together with the post mortem appearances, prove conclusively that it was the "splenic fever," the affection described by Professor John Gamgee in report of Agricultural Department for the year 1869. It is highly probable that the cattle arriving here in two different lots have had the disease communicated to them by passing over or having been herded in sections of country previously traveled over by droves of Texas cattle, en route to supply the various Indian agencies along the Missouri River. The disease has not, however, appeared at any other point where cattle are herded and kept for issue as beef, as for instance at the Yankton agency, 15 miles from here; Whetstone agency, 30 miles from here, and other agencies still more remote on the Missouri River.

Ellsworth County, Kans.—A large number of cattle have died within the last six weeks in this county, with a disease supposed to be "Spanish fever." Some herds of fine stock, numbering twenty to thirty head, have lost as high as 60 per cent. Texas cattle were not affected with the disease. Of those examined the gall was found to be five or six times as large as it should be, the spleen enlarged, and the manifold dry and hard.

Vernon County, Mo.—Calves are dying in the eastern part of the county with the black leg, which is very fatal.

Dallas County, Iowa.—Some deaths are reported among calves and young cattle, occurring very soon after the stock was turned into the fields from which the corn had been gathered. There is little "smut" in the corn—less than usual.

Jackson County, Ga.—We have had an unusual disease among the

poultry; thousands have been swept off this summer. I lost all mine, about 100 head. The disease seemed to be a loathsome disease attacking and killing the same day. The only remedy was to feed on salt dough.

A correspondent reports that there is a disease in some parts of Ohio County among horses, old and young, which affects the upper part of the throat and breaks into running sores. Many valuable horses have died.

Montgomery County, Va.—Hog-cholera has prevailed extensively on the fine corn-lands of New River. Some farmers have lost 25, some 50, and some 100 head, mostly stock hogs. An observing farmer has made several post-mortem examinations. He invariably found the entrails filled with worms, whenever examined, 2 to 4 inches long, in countless numbers, which so completely filling the cavity as to prevent the passage of anything. He administered croton oil and spirits of turpentine; out of 20 shoats 17 were thus relieved.

Marion County, Iowa.—Many hogs have died of "quinsy." Thousands of dollars' worth have died in the county in the last five weeks.

Johnson County, Iowa.—Hog-cholera slightly manifest in some parts of the county.

DETERIORATION OF WHEAT.

The causes of deterioration in the yield and quality of certain crops, so manifest in the experience of a majority of American farmers, demand investigation. The fact that one field produces double the quantity of another adjoining, and that the yield of virgin soils diminishes year by year, calls for explanation and even reiteration of the reasons for such deterioration, and suggestions of remedies and means of recuperation. Recent inquiries have been directed to the present Commissioner of Agriculture relative to the diminution in the average yield of wheat. He has felt a personal interest in this subject, and enjoyed the advantage of many years of experience and investigation, and thus responds to such inquiries:

Many farmers look upon the culture of wheat as the most profitable work in which they can be engaged, while some claim that corn is a more profitable crop. Let the question be settled by the fact that land is sometimes better adapted to corn than to wheat; but, be that as it may, the wheat crop is certainly of sufficient importance to claim our attention to all the prominent errors which exist with regard to its proper cultivation.

It is a curious and no less remarkable fact, that, in the midst of the use of highly improved implements, guided by experienced hands and superior knowledge of the science of agriculture, the production of wheat has gradually and certainly diminished in quantity in all the wheat-growing States. Why is this? May the evil be overcome? It is no solution of these questions to answer that the soil has been exhausted of those peculiar constituents essential to the growth and maturity of wheat, for this argument would lead to the conclusion that nature had not by her laws made provision for the perfect growth of wheat at all, and that ultimately this production must become utterly extinct. But this is an unwise as well as unprofitable conclusion. We must, therefore, resolutely face the fact that the cause of the failure is

to be found in the farmer's want of skill, and inquire how this skill may be improved.

Examine the present mode of cultivation in the wheat-growing States. Finding a field in clover, it is plowed in the fall or in the spring, and planted with corn. The corn having been taken off, it is plowed again the next spring and sown with oats, and upon this oats-stubble all the manure of the barn-yard is put. It is then plowed under, and the field sown with wheat; and when this crop is taken off it is either sown again with wheat, "stubbled in," as it is called, or it is sown with timothy in the fall, clover in the spring, and again is laid down to grass, remains two years, and then goes through the same rotation. This is the ordinary process of cultivation throughout all the Middle States, and it is by this process that our wheat crops have diminished at least one-third in the last twenty-five years, while there is not the same diminution in any of the other crops which make up the whole course. The products of corn, oats, and grass are as large if not larger than they ever were. The marked failure is in the wheat crop. It is visited by fly, midge, rust, mildew, or it grows into straw without a corresponding production of grain. An experiment made upon my farm, and running through a period of ten years, induces me to say that the failure of the wheat crop is occasioned, in a great measure, by the improper use of barn-yard manure. Wheat is a delicate plant, both in its organic structure and the food it consumes, and yet we apply, in aid of its germination and growth, the gross, raw product of the barn-yard, filled with embryos of worms, bugs, midges, and beetles, giving a nauseous dose to the first germ of the wheat, and furnishing an unfit food throughout the whole life of the plant. Add to this the vermin which the contents of the barn-yard have brought upon the field, and then we may account for the midge, Hessian fly, mildew, rust, and all other evils which we have been accustomed to deplore when harvest comes.

I trust I may not be understood as depreciating the use of barn-yard manure; so far from this, I am convinced that human skill has never been able to concoct a combination of plant food so excellent as that which comes from the stable, when properly used. But the proper use of it is upon corn ground. After the grass has been cut and made into hay the second year, and when the tap-roots of the clover have attained the size which makes them valuable as renovators of the soil, let the grass grow up for a few weeks; then haul all available barn-yard manure upon it, and scatter it over the ground; and as late in the fall as the season will allow plow it under deeply. Corn is a voracious plant, and will consume any food, however gross. Its roots are all-reaching and far-reaching; they will find the manure readily, and the crop will tell the story of its value. When the corn is taken off, and during the next winter, let the corn stubble be broken close to the ground, raked off, and burned, or, what is better, hauled to the barn-yard, and in the spring as soon as the ground is dry enough harrow with a sharp and heavy harrow until the surface is smooth; sow oats without plowing, and roll after sowing. The manure is yet undisturbed, and not likely to make the oats so rank as to cause them to lodge. Oats will grow better and be more productive without plowing than with it. As soon as the oats are off, let the stubble be plowed in as deeply as possible, by which the manure, covered before corn-planting, will be thrown to the top, and the scattered oats will have an opportunity to vegetate; then stir the ground again with the plow, thus destroying the growing oats, and thoroughly mixing the earth and upturned manure, which, by the lapse of time, has undergone a thorough decomposition and combined with the

earth, and in this way has been made a food properly prepared for the wheat plant. The earth through its influence has been assimilated to the humus which was originally so productive of wheat. If the land under this treatment tends to become too mellow, let timothy be sown in the fall with the wheat, at the rate of one bushel to the acre, and clover in the spring at the rate of one bushel upon five acres. If no timothy be sown in the fall, the wheat will be greatly benefited by harrowing it with a sharp harrow in the spring. No fear need be entertained of injuring the roots, and the ground will be freshened and well prepared for receiving the clover-seed. When it is sown, a roller passed over the ground will fix the clover-seed for immediate germination, and level the surface for the reaper and mower; and I may add, that the habitual use of a roller upon cultivated land, whether in corn, oats, wheat, barley, or clover, has a tendency to destroy the larvæ and pupæ of insects to an extent rendering them harmless, while all these crops are benefited by it.

In the Southern States there is no reason why cotton or tobacco may not be substituted in this course for wheat. It may be suggested that, when either of these crops is cultivated the last time, the land may be sown with clover, which by the following June will grow to its full size, and may then be plowed under. If the ground be again plowed in September, it will be in the best condition for a wheat crop, or, what is better, if the clover be left until the following spring, when it shall have attained its full growth, the land will be in a condition to grow corn, cotton, tobacco, or anything else. This system, pursued for a series of years, may be relied upon for the production of crops perpetually, always using barn-yard manure upon the clover sod, and planting with corn. It is the enriching influence of clover roots and the rotation of crops which produce the result. Let it be remembered that there is little reliance to be placed upon the effect of a green crop turned under by the plow; ninety per cent. of it is water. It is the full-grown *root* of clover that enriches the soil.

Care in the selection of seed wheat is of the very first importance. Discard all idea of mixing ingredients with it to destroy smut, rust, mildew, or anything else; for, beyond the mere operation of washing or the manure they may furnish, it is questionable whether they produce any good effect. Smut is a fungoid growth from a diseased grain of wheat, which by contagion will be communicated to the mass, but from which the mass may be purified by washing with soap and salt water. Mildew is a parasitic fungus upon the straw, by which the seed is never affected otherwise than by the destruction of the straw and consequent shrinking of the wheat in the head. The midge, Hessian fly, and weevil, are insects the consideration of which should be introduced in any discussion on the subject of the cultivation of wheat. The midge is a small winged insect, the larva of which is an orange-colored maggot, found between the skin and chaff of the grain of wheat while it is in its milky state. The egg is deposited between the chaff and the kernel, and is so minute as not to be discoverable by the naked eye. The larva extracts the milk and destroys the grain. The Hessian fly deposits its egg, which is about the size of the smallest grain of clover-seed, upon the blade of wheat, from which it falls into the crotch of the plant or upon the ground; if upon the latter it perishes, and if upon the former it is hatched into a larva resembling a flaxseed. As it grows, it lives upon the sap of the straw, and destroys it at its point of contact, which is usually in the first joint, so that it is broken off by the wind or its own weight. The weevil is a hard-shelled beetle, which preys only upon grain after it is matured. The remedy for smut and mildew is

careful cultivation, frequent rolling, and selection of clean, pure, heavy seed. The weevil may be driven from barns or bins by any strongly smelling plant, such as mint or burdock.

There are involved in this discussion two simple principles of agriculture—the timely application of manure, and the proper rotation of crops. It may and probably will be said that clover will not grow successfully in the Southern States. With all due respect to the little experience which southern farmers have had in the use of this grass, I must insist that such is the character of the clover-plant, with its deeply penetrating tap-root, which nature intended for the supply of moisture and nourishment, that no other grass will endure more drought. Lime is one of the largest constituent elements of clover, and, if it be applied to the land, clover will grow almost anywhere, and wherever it grows the soil is renovated and enriched by it.

APPEARANCE OF WINTER-WHEAT.

Voluntary returns from regular correspondents indicate a medium condition of winter-wheat. The dry weather in many localities interfered with early seeding, and the fly has been at work in some places. An increase of area sown appears probable in Arkansas and Texas. The following extracts are given:

WINTER CROPS.

York County, Maine.—Many pieces of wet land have been sown to winter-wheat.

Windsor County, Vt.—The recent rains have filled streams and springs, and have helped fall feed and fall-sowed grains.

Yates County, N. Y.—Wheat came up well; small but healthy; slight damage by the worm. The severe drought prevents as large a top as usual; about the same area sown as last year.

Otsego County, N. Y.—Winter grain and fall feed are looking poorly.

Seneca County, N. Y.—Wheat has come up badly and looks spindling, with decreased acreage.

Bradford County, Pa.—Wheat has come up very slowly; a poor stand.

Huntingdon County, Pa.—Light showers have kept the winter-wheat in good condition. It is fully up to an average.

Butler County, Pa.—The showers of the past few weeks have improved the appearance of fall grains fifty per cent.

Lancaster County, Pa.—Wheat looks well; neither too thin nor too rank.

Sussex County, Del.—Decreased acreage sown to wheat, attention being given to small fruits, which are more profitable.

Carroll County, Md.—Late showers have improved wheat and rye, which are looking well.

Fauquier County, Va.—The favorable fall has given wheat a fine start.

Prince George County, Va.—The wet weather will diminish the already small area in winter-wheat. Winter oats have almost entirely superseded wheat, except immediately on the James River.

Fairfax County, Va.—Fall months have been favorable and wheat has come up well. Decreased acreage.

Powhatan County, Va.—Most favorable seeding season for several years, but, owing to failure of the wheat crop in this county, there is not a full crop seeded. Winter oats have been substituted by many farmers.

King George County, Va.—Wheat looking finely; acreage somewhat increased.

Culpeper County, Va.—Early sown wheat looking well.

Nelson County, Va.—Wheat came up rapidly, and is looking unusually promising.

Fredrick County, Va.—A good stand of wheat.

Rockbridge County, Va.—Fine stand of wheat, and looking well, except that sown in August and September, on which the fly has been working.

Transylvania County, N. C.—Early sown wheat looking well.

Moore County, N. C.—The drought has delayed the sowing of oats and wheat.

Jackson County, N. C.—A heavy seeding of wheat and small area of rye; growing finely.

Fannin County, Tex.—Almost every farmer has sown what seed-wheat he could procure. Wheat, very scarce; price, $2 to $2 25 per bushel, in specie.

Coryell County, Tex.—Prospect for winter wheat and rye never better. A larger area has been sown to wheat than for several years.

Prairie County, Ark.—Area in winter wheat increased 25 per cent. above average. Winter-oats 20 per cent. above average. Little rye sown.

Weakley County, Tenn.—Fine sowing season; but the area sown to wheat will be smaller than for several years.

Smith County, Tenn.—Wheat is being put in better than last year, but not very well yet.

Carter County, Tenn.—Wheat has taken good root, and looks well.

Giles County, Tenn.—Wheat and rye quite promising. Acreage increased 10 per cent.

Fayette County, W. Va.—Some farmers deferred sowing wheat until late in October, hoping thereby to escape the ravages of the Hessian fly next season.

Marion County, W. Va.—Wheat and rye have come up well. I never saw a better stand at date.

Mason County, W. Va.—The showers in October have brought up the wheat, which is looking very well for the season.

Grant County, Ky.—Wheat and rye looking badly. The drought and the fly are affecting them seriously.

Lincoln County, Ky.—Wheat and rye doing well.

Livingston County, Ky.—Wheat looking well.

Adair County, Ky.—Wheat looking better than usual.

Vernon County, Mo.—Wheat sown nearly a month later than usual, to avoid the fly and chinch-bug, but warm days and frequent showers have hastened growth. Prospect never better.

Phelps County, Mo.—Dry season. Grain sown late and on reduced area.

Adair County, Mo.—Too dry for seeding.

Putnam County, Mo.—The chinch-bug is the great pest of this county, in some instances destroying nearly all the crop. There appears to be no way to get rid of it but to quit sowing spring-wheat.

Montgomery County, Ill.—Wheat coming up finely and growing rapidly.

Edwards County, Ill.—Wheat has been put in well and early, but it is small and backward, owing to drought.

Fairfield County, Ill.—The rains are bringing up the wheat, and benefiting pasturage.

Scott County, Ill.—Large crop of wheat sown, and looking well.

Pike County, Ill.—Not much more than half the wheat up; dry weather; farmers put it in deep, hoping to reach moist earth. The rain came and run the ground together, forming a crust, which prevents the plants from coming through.

St. Clair County, Ill.—Wheat very promising.

Floyd County, Ind.—Wheat is not overgrown, but well rooted and set.

Noble County, Ind.—Wheat has had very little rain.

Brown County, Ind.—Dry month, but the small showers and cloudy weather have kept wheat alive.

Fayette County, Ind.—The drought ended, and fall grains are coming up finely.

Cass County, Ind.—Wheat is in worse condition for winter quarters than for many years. Drought.

Parke County, Ind.—Poorest prospect for wheat in the past ten to fifteen years. Drought.

Scott County, Ind.—The season continues dry, with occasional showers, just enough to keep wheat alive. Increased acreage sown. The fly is damaging the early sown.

Madison County, Ind.—Remarkably dry. Wheat looks better than could have been expected.

Franklin County, Ind.—Wheat is looking well.

Logan County, Ohio.—The effect of the drought upon wheat cannot yet be determined. I have known in other years wheat to lay in the dust in the fall, and with the late fall rains spring up and mat the ground before the winter proper set in, and produce above an average crop.

Crawford County, Ohio.—Wheat doing well; as large a growth as is desirable at this time of year.

Henry County, Ohio.—Wheat less promising than I remember to have seen it in thirty years. Ground exceedingly dry at time of sowing. Came up thin and in spots.

Vinton County, Ohio.—Most of the wheat sown late. The fly is in the early sown.

Branch County, Mich.—Wheat looks poorly, owing to the drought. Unpromising for a crop next season.

Hillsdale County, Mich.—Wheat does not come up well. Fire still raging in the woods. In many localities the earth is dry to the depth of three feet.

Clinton County, Mich.—Wheat has not come up well. Some farmers have waited for rain before sowing.

Livingston County, Mich.—Scarcely any wheat sown on summer-fallow, and much of the seed sown is lost. Many fires yet burning in the swamps and marshes.

Wayne County, Mich.—Much of the wheat sown in September has not yet come up. Pastures nearly all dried up. Much suffering among stock for water.

Mercer County, Wis.—Owing to the continued dry weather, wheat and rye have not been sown as early as usual, but what has been sown looks well.

Columbia County, Wis.—Little grain sown this fall, owing to the dry weather.

Washington County, Iowa.—Fall wheat prospect poor. Drought.

Adams County, Iowa.—Five times as much winter-wheat sown as in any previous year.

Shawnee County, Kans.—Wheat sown a month later than usual, but it is looking well.

Morris County, Kans.—Very little seeding done before October 10. A good breadth sown, but hardly as great as last year.

Republic County, Kans.—Two years ago I spent a week with a team in going after winter-wheat for seeding. The result from ten bushels was very satisfactory. Last year I sowed again, and four other farmers followed. The results were so good that five hundred to one thousand acres have been sown this fall—last year thirty-one. I have just procured five bushels of winter-rye, and will start that over the county next fall. Will get winter-barley as soon as I can procure it.

Dickinson County, Kans.—Dry month; wheat backward.

Osage County, Kans.—Chinch-bugs still alive by millions, and in some fields attacking the growing wheat.

Bourbon County. Kans.—Decreased breadth in wheat and put in worse than usual.

Miami County, Kans.—Sown late, but looking well.

Gage County, Nebr.—Early sown wheat looks well; late sown not so good.

Cass County, Nebr.—Wheat looking remarkably well.

Stanislaus County, Cal.—No rain yet, but the farmers have been sowing wheat and barley extensively on dry summer-fallow.

Alameda County, Cal.—No rain since the middle of May; but little wheat sown in this section of the State for the want of rain to moisten the ground.

VALUE OF CORN FODDER.

In the annual report of 1870 a digest of the views of numerous correspondents, of intelligence and experience, is presented, from which the following conclusions were drawn:

1. Green corn-fodder is neither worthless nor the poorest of all soiling material.
2. It is best when planted in drills or hills, not so thickly as to prevent normal growth and development, cultivated to destroy weeds and grasses, and cut between tasseling and earing, when the elements elaborated for production of the ear are stored in readiness for immediate use.
3. It is probable, both from the *rationale* of the case and from facts presented above, that in the more northern latitudes a mistake has often been made in sowing thickly southern corn which cannot mature, the fodder from which, fed in August, must be very nearly worthless. On the contrary, the fodder from northern corn, especially sweet corn, drilled widely and cultivated, and fed just before earing, is found to be very valuable.
4. Its value, compared with lucern, millet, the best grasses, and other plants containing a large percentage of nutriment, taking into consideration the quantity produced and the cost of its production, has not been determined fully, and should be decided by a series of thorough and exhaustive experiments.

Confirmations of the correctness of these conclusions are received from every direction, as the result of further and more careful experiment during the present year. Among the authorities repeatedly quoted to show the assumed worthlessness of corn-fodder, is the Boston Journal of Chemistry. The position of that journal is that "when raised from broadcast-sowing it is nearly worthless, but when sown in hills or in drills and cultivated with access of air and sunlight, it is of high value." An experiment made by the editor this season shows that fodder-corn

planted in drills contained of dry matter, the water being evaporated in a drying closet, 17 per cent., while that from corn sown broadcast contained but 8 per cent., in which sugar and gum were almost entirely wanting. This illustrates the great superiority of stalks collected just as the ear begins to form.

At a meeting of the Western New York Dairymen's Association, in September, Mr. Lewis F. Allen stated that, in experimenting with fodder-corn, he had planted one acre in sweet corn, which grew to a height of about 2½ feet, feeding being commenced when the corn began to tassel. The acre supplied sixteen cows twenty-three days, (equivalent to feeding one cow three hundred and sixty-eight days,) yielding about 8½ tons. Common Ohio green corn, of which the crop was double that of the sweet corn, was then fed, and the cows appeared to relish it equally well. The result was a steady increase of milk and a large increase of butter.

In respect to a substitution of lucern in place of fodder-corn, Mr. Martin said that the value of the former as a food for dairy cows would appear to have been overrated to some extent. It belongs to the clover family, and the milk of cows fed upon it is not equal for purposes of butter and cheese to milk from the grasses proper; and the butter and cheese obtained from feeding it are deficient in keeping qualities.

Mr. E. W. Stewart brought forward the practice of Mr. Fry, who raised corn in drills, dropping the seed in every third furrow. One acre supplied one hundred and five cows four days, equivalent to feeding one cow four hundred and twenty days. Mr. Stewart held that when the corn-plant began to tassel it contained all the constituents of the grain.

Mr. Pierce, of East Hamburgh, said that he had not found sowed corn capable of increasing the production of milk after it had fallen off, but that if the feeding was commenced in season the flow would be kept up, and the cows sustained in good heart and flesh.

AGRICULTURAL SOCIETIES AND FARMERS' CLUBS.

A correspondent in Plymouth County, Massachusetts, writes urging the formation of farmers' clubs and the frequent meeting of farmers for comparison of views, &c. He says:

If we had farmers' clubs organized in all the towns, and these in communication with a central head, any important fact established could be at once made known to all the clubs throughout the country. The most important work for the clubs would be to establish facts by actual experiments. This is our great want at present. We have very little positive knowledge in regard to the best methods of applying labor or material to the soil for any crop. Take Indian corn, for example. We find great difference of opinion in regard to the plowing of the land, the application of fertilizers, the planting of seed, and the cultivating and harvesting of the crop. This ought not to be. It is true that climate and soil have something to do with the methods; but with organized effort and experiment the best methods of planting and cultivating our principal crops may be developed, and thereby some progress be made in the right direction. Let a farmers' club be formed in every town, and let no year pass without the institution of some experiment in agriculture for the instruction of the members, and when the results are important let the facts be communicated to the Department of Agriculture for more general dissemination.

The Concord (Massachusetts) Farmers' Club presents the following list of subjects to be discussed by members during the ensuing winter, one being assigned to each weekly meeting, from November 2 to April 18, the meetings to be held at the houses of the members:

Economy of small farms as compared with large ones. Our discussions—what questions shall we select, and how discuss them? Insects injurious to fruit-trees and

flowering shrubs, and the remedies. Birds, their habits and agricultural value. The farmer and the hired man—cannot some means be adopted to secure responsible help on our farms? Comparative value of heavy and light soils for farming purposes. Field and garden seeds. Co-operation for farmers. Restoring worn-out lands—how shall we do it? The farmer and the markets—how can the farmer get a fair return for his crops? Crops of 1871—what crops have paid the best for the labor and money expended? Of what benefit has chemistry been to agriculture? Special fertilizers—notes of experiments. Agricultural machinery—what machines does the farmer need? The law of germination—our use and abuse of it. History of the Concord Farmers' Club. Profits and losses in milk-raising. Education of farmers' sons and daughters. The cranberry crop—soil and cultivation. Experimental farming—its value to the public. Small fruits raised for family and market. Pickles—at what price can we afford to raise them? Barns—plans and specifications, with details.

This programme is suggestive to such clubs as are at a loss to know what course to pursue to make their meetings interesting and instructive. These organizations are rapidly increasing in numbers, and, when properly conducted, must result in much practical good to the agricultural interest.

As an adjunct of town clubs, supplying a feature calculated to give vitality and permanency, as well as interest and utility to these local organizations, we would recommend rural libraries, in which the farmer may find the latest and best agricultural books and journals for the instruction and profitable entertainment of himself and family.

In the West a lively interest is springing up in the formation of town clubs among the farmers, and the good results are already apparent. Our correspondent for Rock County, Wisconsin, reports the existence of a club at Beloit, embracing thirty-four farmers of the township, who farm each from 60 to 360 acres, limestone soil, prairie, and timber-land. He adds:

We are advancing in this town; getting more correct ideas of farming by rotation, clovering, pasturing cattle and sheep, raising horses of breeds adapted to farming purposes. We have better stock than formerly, and are also raising more fine-boned hogs than heretofore, and considerably more corn and less wheat; make more manure, and draw it out and plow it under, instead of burning the straw, as was done twenty years ago. We make no crop a specialty; mixed husbandry pays the best.

A correspondent in Butler County, Ohio, in a communication transmitting names of the officers of the county society, adds:

We have very successful fairs, and in many regards our society is well managed. Our grounds are large and commodious, and in every way well improved. Our officers, however, a long time ago, permitted the introduction of negro minstrels, fat women, big babies, deformed animals, riding nuisances, &c., to the annoyance of visitors and to the disgust of those who believe that such exhibitions should not be tolerated at such a place. Part of the grounds became worse than a bear-garden, and the "noise and confusion" are enough to drive quiet people out of the grounds. Besides, these exhibitions distract the attention of the young, and some older people, from the real object of the fair, and tend to educate the people in the wrong direction; they degrade and debase, rather than instruct and improve. I wish the influence of the Department of Agriculture could be brought to bear against this abomination.

RECENT STOCK SALES.

At the cattle sale of Edward Iles, near Springfield, Illinois, November 15, 22 short-horn cows sold for $15,664, or an average of $712 each. "Jesse Hopewell" was sold to J. H. Kissenger, Clarksville, Missouri, for $2,499; "Oxford Duchess" to J. G. Taylor, Decatur, Illinois, for $2,100; "Potentilla" to D. Sodowsky, Indianola, for $1,800; and "Nelly Bly" to Frank Spear, Tollula, Illinois, for $1,800. The lowest price realized was $150, for "Rosalie." Ten bulls brought $3,725, an

average of $372 50 each. The highest price, $800, for "Chief Napier," purchased by E. W. Mills, Sullivan, Illinois; "Canadian Prince" brought $510, and "Seventh Duke of Airdrie" $500. At this sale 16 Berkshire swine averaged $28 63 each. Chester Whites sold low.

At the sale of the Clifton stud, property of R. W. Cameron, New York, November 1, 35 thorough-breds of all ages sold for $27,985, an average of $799 60 each. The stallion "Hampton Court," foaled in 1864, and sired by Young Melbourne, brought $3,000; J. Carter Brown, of Providence, the purchaser. "Warminster," foaled in 1869, sold for $1,650; and "Glen Athol," foaled 1869, brought $1,400. The six stallions averaged $1,426 66 each. The mare "Stolen Kisses," foaled in 1864, was sold for $1,900, to P. W. Hudson, Manchester, Connecticut; "Invercauld" brought $1,580, and Eleanor, $1,000. The lowest price was $300, for "Casemate," foaled in 1860. Of the two-year olds "Inverary," brown filly, sired by Leamington, was bought by P. W. Hudson for $2,400. The yearlings ranged from $925 to $375, and the weanlings from $925 for a bay colt of "Stolen Kisses," by "Leamington," down to $100. Of half-breeds a bay gelding, by "Hartington," brought $500. Two colts by "Leamington," property of R. B. Forbes, jr., brought respectively $705 and $500. In Jersey cattle the cow "Daisy," four years old, brought $350; "Daffodil" $225; three heifer calves, respectively, $165, $150, and $140; and a yearling bull, $130.

The stock consigned to A. M. Harkness, Philadelphia, by P. H. Fowler, Watford, England, were sold November 7. Twelve Jersey cows and heifers, and two bulls, and four Guernsey heifers, were disposed of at an average of $213 75 per head, $290 being the highest price realized for a cow, and $115 for a bull. Eleven mountain and Shetland ponies averaged $143 each. Twenty Shropshire Down sheep averaged $19 per head—$11 to $25 for young rams, and $24 to $40 for ewes.

General Singleton, Quincy, Illinois, sold, November 1, 11 short-horn cows at an average of $224 18 per head, and one bull at $475. The highest price paid for a cow was $450 for "Deborah," by S. L. Crippen, Camp Point. The Alderney cow, "Buttercup Fifth," brought $500, bought by J. P. Erskine, of Quincy. A number of Berkshire swine was sold. One sow, with five pigs, brought $55; another, with seven pigs, $49, and another, with the same number of pigs, $41; single sows, $22 to $26; pigs, $15 to $25.

Geo. E. Waring, of Ogden Farm, Newport, Rhode Island, has sold his Jersey cow "Fancy" (reserving her next calf) for $1,250 to John S. Eldridge, jr., Readville, Massachusetts.

At a sale of stock consigned to Richards, Leftwich & Co., Baltimore, on November 21, ten Jersey cows and heifers averaged $192 50 per head, $340 being the highest figures reached. Five Guernsey heifers averaged $104 per head, and six short-horns averaged $161 66.

At a sale of Jersey cattle belonging to S. J. Megargee, Montgomery County, Pennsylvania, November 15, prices ruled low. The highest price realized was for "Buttercup," six years old, $250, and run as low as $30 for a four-year old. Calves ranged from $7 for a bull one month old to $54 for a heifer calf six months old.

R. W. Cameron, of New York, has sold Alderneys as follows: Cow Heatherbell, four and a half years old, $450; cow Daisy, four years old, imported, $350; bull, fifteen months old, $130; one heifer calf, eight months old, $160; and one at $140; and another, seven months old, $165.

J. J. Davidson, Balsam, Ontario, Canada, has recently sold the three-

year old Clydesdale mare "Darling Third," by imported Netherby, to William Moffat, of Strongville, Ohio, for $1,000 gold.

Colonel J. J. De Forest, of Duanesburgh, New York, has recently sold twelve pigs, the produce of one improved Cheshire sow for one year, for $163. The prices ranged from $15 for a pair of pigs, to $30 for a boar.

Joseph Harris, of Rochester, New York, has sold to J. S. Hardin, Louisville, Kentucky, two Essex sows for $350. Mr. Hardin has also purchased three Jersey cows at $316 each.

Mr. M. H. Cochrane, Compton, Canada, shipped, November 2, eight head of short-horns—Duchesses, Oxfords, and Cambridge Roses—to Earl Dunmore, in Scotland. The Mark Lane Express says that the two Duchess heifers are the produce of Duchess 101st and Duchess 103d, which Mr. Cochrane bought in calf last summer for 2,500 guineas, and the same price is now paid for their calves. The calves are considered superior to their dams. The Oxford cows were bred by Mr. Sheldon.

Messrs. Wolcott & Campbell, New York Mills, New York, have sold to Mr. Cheney, of Gaddisby, England, five head of short-horns, which were shipped to Southampton. One of the five, the Ninth Maid, of Oxford, although landed safely, died a few days after arrival at Southampton, during the quarantine to which all stock is subjected, and in this case with very few of the comforts to which such animals are accustomed.

One of the largest public sales of horses and cattle which ever took place in California was held at Bellevue ranche, belonging to the estate of the late R. J. Walsh, Colusa County. The horses, 148 head, were all unbroken. They were bred from the best American mares by superior horses. The first, second, third, and fourth choice, one pair each, sold for $120, $120, $80, and $67, respectively. The remainder were sold in a single lot at $24 each. The bulls were sold as follows: first, second, and third choice, $100 each; fourth choice, $52 50; fifth, $40; and the four remaining bulls for $155. The general horned stock sold, first choice, 5 head, $100 each; second choice, 10 head, $70 each; third choice, 10 head, $59 each; and so on down to the eighteenth choice, comprising the remaining 380 head, which sold for $18 25 per head —altogether, 1,145 were sold under this head. The Bellevue ranche contains 20,000 acres, extending along the Sacramento River for eight miles, and mostly valley land. For the past five years the ranche has been managed by the executor of Mr. Walsh, who died in 1866, leaving a debt of $80,000 on the property. There were then 1,200 head of stock on the ranch. In the five years the total sales of stock and grain have amounted to over $250,000. The $80,000 debt has been paid; over forty miles of fence have been built; there is now as much stock on hand as there was five years ago, and the executor has in hand $40,000, the proceeds of the stock sale.

FARM MANAGEMENT IN ENGLAND.

A heavy clay farm of 133 acres, in Clavering, Essex, abandoned to weeds and neglect, and clover sick, producing but 24 to 32 bushels of wheat, was rented in 1862 by Mr. W. Savill, a schoolmaster of the village, for a period of seventeen years. He put in drains three feet deep, and kept the surface clear of weeds. Commencing with 85 acres of arable land, he has increased his annual tillage since 1867 to one hundred acres, and has steam-plowed an average of 35 acres annually

for the past four years. He applies eight loads per acre of farm-yard manure once in three years, and every year gives his crops a top-dressing, costing at least 25 shillings per acre. The result of this treatment is an average of 47 bushels of wheat per acre, or 48 bushels of barley. His last crop of wheat, after potatoes, was 53½ bushels per acre. He employs five men and five boys regularly, and occasionally five extra men and six to eight girls of thirteen to sixteen years of age.

Professor George H. Cook, of the New Jersey Agricultural College, reports the practice of Robert Leeds, an English farmer of considerable reputation. Mr. Leeds's farm embraces 1,160 acres; 1,000 acres being in active tillage under four-field rotation—roots, wheat, barley and oats, clover and timothy—the remainder in pasture or permanent meadow. Last year there were 300 acres in beets, ruta-bagas, and turnips, yielding 900 bushels of roots per acre, the whole of which were consumed upon the farm. The stock consists of 2,000 sheep and 150 beeves, besides horses, calves, and pigs. The sheep are chiefly Southdowns, the beeves Durham, all in fine condition. Mr. L. calculates to add $30 to $80 to the value of a steer in eight or nine months. He practices the system of box-feeding. These boxes are about ten feet square, quite high, sheltered and well ventilated, in which the steer can turn around and lie or stand at pleasure. The water and feed boxes are movable up and down, as in a month after going in they may need to come up a foot to clear the bedding. One box has oil-meal, another cut roots. another hay, and a fourth water. He can help himself at any time, and such generous bedding of clean straw is thrown to him that he eats some of it, while he tramples the remainder and converts it with his droppings into the best of manure. The bullock stays in this box until ready for the knife, and when he comes out, fat, he leaves, perhaps, ten cubic yards of rich compost beneath him. Mr. Leeds sells, annually, 200 to 250 beeves, and 500 sheep.

William Smith, of Woolston, Bucks, reports the cost of steam culture upon his farm, in preparation of seed-bed for wheat, barley, beans, and roots. A field of 39 acres of heavy clay land, sown to wheat, which is the seventeenth crop under steam culture, cost an average of 4*s.* 7½*d.* A field of 29 acres heavy land, which produced a crop of beans in 1870, when the preparation cost 4*s.* 8*d.* per acre; wheat in 1871, at 5*s.* 11½*d.* per acre, has been prepared for beans next year at a cost of 6*s.* 2*d.* The field is not quite clean, but will be so when the beans come off next year. The ridges will be forked and picked this winter at an expense of about 5*s.* per acre. Another field of heavy land, 24 acres, has been prepared for barley next year. The ridges will, after picking, as in the preceding case, need splitting by a subsoiler worked by horses, in the winter, at a cost of 3*s.* per acre. This, added to the ridging and subsoiling at 6*s.* 2*d.* per acre, makes the total cost of the seed-bed 9*s.* 2*d.* per acre. A field of light land, 14 acres, prepared for barley—the sixth white straw crop in succession—costs 6*s.* 2*d.* per acre, requiring only ridging and subsoiling. Thirty years ago this field was in grass of the poorest sort, giving a very light produce on an average of years, and when plowed up, twenty to thirty years ago, the yellow clay, which plowed up at not over four inches from the surface, looked like good stuff to adulterate butter with; yet, by the aid of the ridger and subsoiler, this clay has been converted into black mold to the depth of a foot. A lot of 13 acres of light land has been similarly prepared for beans at the same expense, and neither the spade nor plow, worked by man or horse, can equal it in quality at any cost. To steam culture Mr. Smith attributes his success in keeping his land clean under a yearly

system of grain-cropping, and thinks it has much to do in keeping it in condition. His land is not only heavy, but very hilly and uneven, which would need, under horse culture, four good horses to plow three roods per day, and the best farmers cannot, with horses in such land, make a clean seed-bed on an average of years for £1 per acre. He states that his own clay lands did not, under horse culture, produce over 20 bushels of grain per acre, and that the best-farmed land of like kind in the neighborhood does not now produce over 24 bushels per acre on an average of years, while his clay land yields an average of 36 bushels. The character of the land has been entirely changed, and his opinion is that clay soils in other districts would change under similar treatment.

THE BRITISH FOOD SUPPLY.

The importations of wheat into Great Britain for the months of 1871, as reported from the official records, amount to 32,365,338 cwt., against 25,969,710 cwt. for the same period last year. The Russian contribution is 13,310,475 cwt., against 8,219,154 cwt. for a similar period of 1870. That of the United States, 10,832,561, against 10,666,001 last year. Germany reduces her proportion for these periods from 3,085,895 to 2,447,256 cwt. France, usually sparing little, sends 122,004 cwt., against 174,651 the previous year. Next to Germany, in quantity, comes British North America, supplying 2,426,248 cwt. this year, and 2,212,723 in ten months of 1870. The United States has increased her proportion but little, which stands at 33 per cent. of the whole; but Russia has advanced from 32 to 41 per cent. The average price paid for Russian wheat was $2 84 per cwt.; for that of the United States, $2 99, being an increase from last year of 37 cents per cwt. The total receipts for our wheat for this period have been $32,464,350; for flour, $6,168,680. Russia sends little wheat in this shape; none is separately reported this year. The total receipts of flour and wheat meal are but 3,347,001 cwt. The quantity of Indian corn imported in ten months is 14,260,760 cwt., costing $27,330,870.

NOTES FROM THE GARDEN.

DEPTH TO PLANT SEEDS.

The proper depth to plant seeds is a question of considerable importance, and one which, like many other similar questions relating to plant growth, cannot receive a definite answer that would be of general or universal application. In dry sandy soils, situated in dry climates, a deeper covering will be required than would be judicious where both soil and climate indicate the reverse of these conditions. For instance, it has been shown that peas continue longer in bearing condition, on sandy soils, when sown at a depth of 6 inches, than they do when placed nearer the surface; and it is said that the Indians upon the table-lands of the Colorado plant corn 10 to 12 inches below the surface with the best results; but if planted with only 1 or 2 inches of covering, the crop fails. Seeds also vary in their ability to penetrate depths of soil in germinating. Leguminous seeds, and some of the largest seeding

gramineæ, can be planted deeper than those of a lighter character. It has been given as a general rule that all seeds germinate most speedily when covered with a depth of soil equal to their own thickness, and where the constant presence of sufficient moisture for germination can be maintained; this rule is, perhaps, as nearly correct as any that can be given.

A BERLIN PROJECT.

A "dendro-pomological garden" is about to be established at Berlin. This garden is to be planted with a collection of fruit-trees, and to comprise an arboretum where all hardy ligneous plants will be systematically arranged. Hedges of various plants, capable of being used for the purpose of live fences, will also be introduced. The idea and the botanical arrangement emanates from Professor Karl Koch, the plans for laying out the garden being perfected by Mr. Meyer, landscape gardener of Sans Souci.

Several years ago, a similar project was proposed by Mr. William Saunders, of this Department, who prepared plans for the botanical arrangement, and for the laying out of the grounds. The work was not commenced until the spring of 1868; since that time operations have been gradually progressing, the ground-plans are nearly completed, and the collections yearly increasing in value and interest. The plan of the Department embraces various important details not included in the published plan of the Berlin project.

AUSTRALIAN SEEDS AND PLANTS.

Inquiries are frequently made of this Department for seeds of Australian trees, especially for the rapid-growing species of *Eucalyptus* and *Acacia*. The native habitats of these plants being characterized by seasons of extreme dryness, has led to the belief that they would be particularly adapted to the dry atmosphere of the western plains. This is a mistake, so far as regards the growth of these plants in dry soils and climates, inasmuch as the season of growth in Australia is very wet; dry weather succeeds this growing period, corresponding to our winters, which is the period of rest. The seplants are unable to resist even 10° of frost, consequently they are not adapted to climates where this degree of frost prevails. No instance is known where they have flourished in the open air east of the Pacific coast. Our native trees furnish species of as rapid growth as any of these Australian plants, so that there seems no necessity for anxiety in this matter. There are a sufficiency of hardy trees known to be well adapted to meet all reasonable necessities.

ENTOMOLOGICAL RECORD.

[By Townend Glover, *Entomologist.*]

Beetles destroying twigs.—Many small branches or twigs of pear, persimmon, and various other trees, deeply cut into and girdled by some insect, have been received by the Department this autumn, with letters making inquiry as to the insect causing the injury, and the best mode of preventing its ravages. It appears, from the correspondence, that the trees are much more injured this autumn by it than they were a few years ago, thus proving that the insect is increasing in numbers, and, if

not prevented, may eventually do much injury. A correspondent at Richmond, Virginia, writes that the elm, persimmon, &c., have been much injured in that neighborhood. Mr. G. F. B. Leighton, of Norfolk, Virginia, states that the pear, hickory, elm, and persimmon are attacked in his vicinity; but that the persimmon receives the greatest injury.

The beetle that thus girdles the twigs is the perfect insect of the so-called "twig-girdler," *Oncideres cingulatus*, Say, (Fig. 1,) a medium-sized, long-horned beetle, of a chestnut-brown color, and having a broad lighter-colored band across the wing-covers. The female beetle first makes a perforation in a branch, generally just below a bud; she then deposits an egg in this perforation, in one case even making as many as six perforations, in which eggs were deposited below the buds in a single branch, not more than a foot in length, sent by Mr. Leighton.

Fig. 1.

After the insect has deposited her eggs, she then proceeds to gnaw all around the branch, thus forming a circular cut or incision, about one-eighth to one-tenth of an inch in width, below the place where the eggs are deposited, so that the exterior part or end dies; the larva, when hatched, feeds on the dead wood, which sort of food appears to be essential to its growth. The principal injury is said to be done in August and September. They have also been found to injure walnut and apple as well as the trees above mentioned.

A great number of the perfect beetles that had just changed were found in Maryland in twigs broken from a large hickory tree, and lying on the ground beneath it. The best way to eradicate this insect is to cut off all such branches and twigs as have the least appearance of having been girdled, and to gather up all fallen branches on the ground and to burn them immediately, as the eggs or larvæ of the next year's generation are contained in these twigs, and, if allowed to remain undisturbed, would produce a race of beetles next season which would girdle all the trees in the neighborhood. The best time to prune off the infested branches is after the leaves have fallen from the trees, as the injury can be more plainly seen than when the tree is in full leaf.

There is another long-horned brownish beetle which also cuts off the branches of oak, apple, peach, hickory, and chestnut. This beetle, which is known as the "oak-pruner," *Elaphidion villosum*, Fab., (Fig. 2,) (*Stenocorus putator* of Peck,) does not make the incision from the outside of the branch like the twig-girdler above mentioned, but the larva cuts the twig from the inside. The egg is deposited in July on a twig near the extremity of a branch The larva, when hatched, penetrates into the wood, and forms a cylindrical burrow several inches in length in the interior of the branch, and, when full grown, eats away parts of the wood of the branch in which it resides, from the inside, leaving only the bark untouched, so that these branches are broken off in autumn by the first strong wind, and fall to the earth with the larvæ yet in them. Professor Peck considered that this was done in order that the branch might retain sufficient moisture from lying on the damp ground to enable the pupa and insect to be perfectly developed. If this insect should increase so as to become very injurious, it may readily be destroyed by gathering up all fallen branches under the trees in winter or spring, before the perfect beetle is developed, and burning them immediately. If such fallen branches are examined in early spring, they will

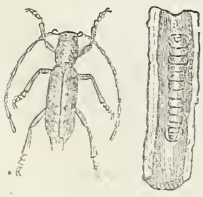

Fig. 2.

be found to contain either pupæ or perfect beetles, which, if not destroyed, would, next season, deposit eggs on the neighboring trees.

The white poplar (*Populus alba*) in this neighborhood is subject to a species of shedding of the twigs, but this does not appear to be caused by any insect, as, upon examination of the fallen twigs, no eggs or vestiges of the work of any insect could be found, and the only peculiarity exhibited by the twigs is a very great enlargement or swelling just above or at the place where the twig is broken.

A NEW ENEMY TO THE STRAWBERRY.—Last May a communication was received from Mr. B. Bryan, of Silver Hill, Maryland, stating that he had observed some small insects injuring his strawberries soon after they had commenced blooming. In his letter he says: "I noticed that the blossoms were dying, and, upon examination, found that a small insect somewhat similar to the curculio was stinging or piercing with its snout the blossom-bud and footstalk of the blossom-bud, thereby causing the death of the blossom." "I found these little curculios in all parts of the field where the berries were growing, and the damage was the same all over the place, and on some vines as high as two-thirds of the blossoms were killed." Mr. Bryan also states that if these insects deposit eggs in the punctures they make, they fail to hatch in almost every instance. On searching a neighboring patch of strawberry plants, he "failed to find any of these small curculios." The insect sent proved to be *Anthonomus signatus*, Say, (*bisignatus* of Schönher,) (Fig. 3,) and as yet must be extremely local, for although diligently searched for in several strawberry beds, both in this neighborhood and in Maryland, not one of these insects could be found. In the specimens of blossoms injured, no eggs or vestiges of larvæ could be found, thus proving that the punctures are merely made for the sake of feeding upon the plant. As this insect has not yet been mentioned as injuring the strawberry, it has been thought advisable to draw the attention of horticulturists to Mr. Bryan's letter, as the fact of this beetle having injured his crop so materially may perhaps account for the failure of the strawberry crop in certain localities. This insect is about 0.11 inch in length; including snout, 0.15 inch. Oval in shape, the thorax one-half the width of the body; elytra or wing-covers reddish brown, with two large irregular oval spots of a darker shade, margined with white, occupying a space a little below the center of each wing; inner margin around the scutellum same color as the spots; scutellum, or triangular spot between the base of the wing-covers, white; thorax, head, and legs dark chestnut brown, coarsely punctured; underside of body clothed with fine whitish hairs; end of abdomen reddish brown. They vary much, some of them being almost entirely without the irregular oval spots on the wing-covers, and of a nearly uniform chestnut-brown color.

Fig. 3.

NEW INSECTS FROM THE WEST.—During the summer, the assistant entomologist, in company with the New York agricultural editorial excursion party, made collections of insects in Kansas, Colorado, Wyoming, and Nebraska, among which five species have been described as new. *Arctia Williamsii*, Dodge, (Fig. 4,) recently described in the Canadian Entomologist, occurs in the mountains. It is a very pretty moth, with chocolate-brown upper wings marked with lines of creamy white; the hind wings rust-red, with brown spots. It is dedicated to Mr. Henry T. Williams, editor of the Horticulturist. *Caloptenus Dodgei*, Thos., a small, almost wingless grasshopper, is found near

Fig. 4.

the summit of Pike's Peak. *Acridium frontalis*, Thos., is quite abundant on the wild sunflower in Kansas. *Œdipoda undulata*, Thos., and *Pezotettix megacephala*, Thos., were collected from the cowcatcher of the locomotive, running at usual speed, during the trip through Nebraska. All are grasshoppers, with the exception of the first named.

CHEMICAL MEMORANDA.

The labratory of the Department is engaged upon several researches of considerable importance and extent. The results of the weekly determination of chlorine and phosphorus in the grape vine and leaf will, when duly completed, possess both a practical and scientific value. The examination of some of the principal commercial fertilizers has been commenced, with the intention to exhibit, at least partially, the condition of this manufacture. The work will be fairly and accurately performed, and will fully set forth the facts of each case.

Among the analyses incidentally executed this month, a few possess special interest.

SUGAR-BEETS.—Messrs. Chaffee and Schreiner, of Denver, Colorado Territory, lately sent to the Department specimens of sugar-beets raised in that vicinity. They were of unusual size, averaging 5 pounds 4 ounces in weight, 18½ inches in length, and 14 inches in circumference two inches below the collar. The substance of the root was compact, firm, and perfectly white. The polarization process gave 14.50 per cent. of sugar, several determinations yielding the same figures.

Dr. Nichols, superintendent of the Government Asylum for the Insane, near Washington, furnished samples of beets grown on the farm attached to that institution. They were of large size, remarkably well grown, firm, and uniform in texture. Average weight, 5 pounds 2 ounces; length, 14 1-5 inches; circumference, 15½ inches. Sugar, per cent., 9.50.

C. F. Hawley, esq., of Kansas City, Missouri, forwarded beets grown in that region. Their weight averaged 2 pounds 4 ounces; length, 11¾ inches; circumference, 11⅓ inches; percentage of sugar, 6.75. These beets were badly grown, small, unhealthy in texture, and very uneven in point of size.

These results go to confirm the prediction already made by the Department, that the natural conditions of growth in the United States are very generally favorable to the production of sugar-beet. The points at which the experiments were made are sufficiently distant from each other to represent much of the territory hitherto untried by this crop, and the percentages of sugar obtained average higher than in most European factories.

Dr. Jellett lately reported from the model farm at Glasnevin, Ireland, 12.05, 9.50, 12.59, 11.62, and 12.43 per cent. of sugar. In Germany and France the working average is less than 10. The second figure obtained by Dr. J., (9.50,) was from beets which had not been earthed up, while the others had been thoroughly cultivated; and he claims that this instance alone proves that direct solar influence is unnecessary for the formation of sugar.

A beet-sugar factory has lately been established in Black Hawk Valley, Sauk County, Wisconsin, by a co-operative association of thirty-four German farmers. Their first crop was a partial failure, but the success of the enterprise seems now (from our meager reports) to be certain.

Their machinery was in part derived from Chatsworth, Illinois, and cost about $25,000. The success and economy of the new diffusion processes, and the improved modes of utilizing the residues, warrant the belief that certain prosperity will reward the energy which engages in these enterprises.

A FLORIDA LAKE-WATER.—A specimen of the water from a small lake in the northeastern part of Florida was recently examined qualitatively. The residue of the filtered liquid reached 300 grains per gallon. Reaction slightly alkaline; specific gravity, 1.0059. A large amount of organic matter was suspended, probably owing to carelessness in bottling. The solid matters were chiefly sulphates of lime and magnesia, common salt, and small percentages of iron and potash salts. The spectroscope gave no indication of the rarer elements sometimes found in mineral waters. It is unusual to observe so large a proportion of dissolved mineral matter in lake-water.

VIRGINIA GOLD-BEARING QUARTZ.—The assay of a gold-bearing quartz derived from Virginia yielded $2,237 54 per ton. As the specimens were not selected by experts, this very unusual richness is deserving only of brief notice.

EDIBLE FUNGUS.—An analysis of the fungus called "tuckahoe" or "Indian bread," *Sclerotium cocos*, Schweinitz: (*Sclerotium giganteum*, Torrey,) is of interest as showing that its nutritive value has been greatly over-estimated. A specimen received from Mr. J. R. Bryan, of Columbia, Virginia, has been very carefully analyzed by the assistant in this laboratory. In external appearance it was rough, dark-brown or brownish-gray in color, covered with a thin and hard cuticle, and penetrated by cracks in every direction. The substance internally was extremely hard and dry, and pinkish in color. Analysis of the latter, (the bark having been removed,) gave the following results:

Moisture, at 140° centigrade, in an atmosphere of carbonic acid	14.16
Organic matter	85.68
Mineral ash	0.16
	100.00

A portion of the dried material yielded to the proper solvents and reagents:

Glucose	0.93
Gum (Arabin ?) and pectin (?)	2.60
Pectose	17.34
Cellulose, and insoluble nitrogenous matter	64.81
	85.68

The material also yielded by two experiments: Nitrogen, 0.364 per cent. and 0.392. As no nitrogenous body could be dissolved in the watery solution, it is inferred that some insoluble azotized principle is present which was not separated from the cellulose. No fat, resin, oil, or starch was contained in the specimen analyzed.

The analysis of this curious fungus, or parasitic growth, by Dr. Torrey, describes it as chiefly composed of a substance which he called sclerotine. He considered this principle to be identical with pectin, a substance since discovered. It is not impossible that the extremely hard and dry condition of the material, evidencing its subjection to a temperature sufficient to change at least its physical character somewhat before its receipt at the laboratory, may account for this discrep-

ancy in percentage of soluble matters. It is, however, certain that tuckahoe possesses a very small nutritive value.

POUDRETTES.—A sample of poudrette analyzed recently will serve to introduce the subject of fertilizers. It contained in 100 parts:

Moisture	11.23
Organic matter	6.96
Phosphates	1.72
Ammonia	none.
Mineral matter	80.09
	100.00
Mineral matter insoluble, (sand)	67.93
Soluble in acids	12.16
	80.09

This poudrette has lost all its ammonia in the process of manufacture, and the original manure has apparently been mixed with about twice its weight of worthless material, probably with the view of absorbing and retaining the liquid portion. One hundred tons would be worth, (approximately:)

6.96 tons organic matter, at $2 50	$17 40
1.72 tons phosphates, at $1 50	258 00
12.16 tons soluble salts, at $5	60 81
	335 21

Or about $3 35 per ton.

Name, "Dogan's Poudrette;" sample left by John J. Shipman, Lewisville, Fairfax County, Virginia. Price stated to be $20 per ton.

SCIENTIFIC NOTES.

REFRIGERATION OF WARM-BLOODED ANIMALS.—In a series of experiments upon the refrigeration of warm-blooded animals, by Dr. Horvath, a young dog was cooled to such a degree that the temperature in the rectum descended to 40° Fahrenheit; yet the animal on the application of heat revived, perfectly uninjured.

In another experiment, where the same region in a rabbit indicated 45°, and in a cat 49°, neither the action of the heat nor of the respiratory movement could be perceived. On the restoration of warmth by pouring warm water over these animals, (which had remained for an hour in a state of apparent death,) spontaneous contractions of the heart, which had ceased for an hour, were observed. The electrical current applied directly to the muscles induced energetic contractions in the same muscles which, before the warmth was applied, were insensible to the strongest electrical action. Another interesting and important fact was, that in an animal which was first refrigerated and then warmed, it was not possible to excite the action of the muscles of the skeleton by even the strongest electrical stimulus when applied to its nerves, while the same muscles, on the direct application of the current, contracted energetically. The fact that we can separate nervous and muscular energy from each other by this agency, which hitherto it has only been possible to do by the employment of curare, promises to be

of good service in future researches concerning the physiology of the muscular and nervous systems.

PREPARATION OF PEAT.—Mr. Alloway has lately delivered a lecture upon peat, before the Society of Arts of London, in which he points out the difficulties that have hitherto prevented the utilization of this substance as a fuel. He adverts to the expensive apparatus used by various persons for treating it, and especially for condensing the peat by pressure, and states that it is impossible to do this satisfactorily by the ordinary means, owing to the peculiar spongy structure of peat and the difficulty of drying it. His method consists in first breaking up the freshly-cut clods with a mallet, by which they are disintegrated, after which they are to be placed in a ditch in the peat-bog, filled with water where they are to remain, forming a thick mush, until the time comes for further treatment. Early in April the operation of making into bricks is commenced, and a small quantity is taken up at a time and molded rapidly by hand into pats, which are then laid upon slats and allowed to drain and dry; this being generally accomplished in the course of a few days.

METAMORPHOSIS OF ALBUMINOUS SUBSTANCES IN THE BODIES OF ANIMALS.—In the investigations upon the metamorphosis of albuminous substances in the bodies of ruminants, by Stohmann, Frühling, and Rost, it has been shown: First, that the whole of the albuminoids undergoing decomposition in the organism appear in the form of oxidation products in the solid and liquid excretions. These results were obtained with food not only poor but also rich in nitrogen. Second, the metamorphosis of albumen is dependent on the quantity of albumen in circulation in the organism. As a rule, the metamorphosis of albumen rises and falls with the albumen in the food. The increase of albuminous matters, above a certain quantity, is a waste with adult animals. Third, the imbibition of large quantities of water increases the metamorphosis of nitrogenous matters. Fourth, the excretion of nitrogen quickly adapts itself to an increase of nitrogen in the food. Fifth, with an insufficiency of albumen in the food the body becomes poorer in albumen. A goat which daily consumed in its food 8.27 grams of nitrogen excreted 11.1. The 2.53 grams lost daily correspond to 74 grams of flesh. The weight of the animal sank, in the ten days of the experiment, from 31.54 to 29.72 kilograms. Sixth, considerable increase of weight took place when, along with a sufficiency of albumen, larger quantities of non-nitrogenous substances were administered.

These experiments showed that the metamorphosis of nitrogenous nutritive materials takes place in the herbivora exactly according to the same law as Voit established for the carnivora; and that relative to the metamorphosis of albuminous matters there is no distinction between carnivorous and herbivorous animals, save that the nitrogenous products of decomposition assume a different form, so that in the herbivora a portion of the nitrogen takes the form of hippuric acid, a substance which is wanting in the carnivora.

CHANGE OF MATERIAL IN ADULT SHEEP.—Henneberg and others have been lately conducting a series of experiments upon the change of material in the adult sheep, under uniform feeding, the animals being two four to five year old wethers. These were fed with as much meadow-hay as was needed to keep them in good condition in regard to nourishment, while each had ninety grains of common salt daily, and as much water as they wished. The experiments were conducted with the assistance of Pettenkofer's respiration-apparatus. It was found that the

excretion of carbonic acid by the animals during the day-time was different from that during the night, but that this was determined, not by the amount of light and darkness, but by the distribution of food during the two portions of the twenty-four hours. The feeding was generally followed very soon by the excretion of carbonic acid. The excretion of water by the skin followed much the same rules as that of the carbonic-acid excretion. A parallelism was found between the excretion of the carbonic acid and of the water in twenty-four hours, both being greater or less as the consumption of nutriment or respiration material was greater or less. From this it would appear that, to economize food, it is necessary to protect animals from conditions which induce perspiration.

A certain medium temperature of the stall in which the animal is fed will be the most economical, since, while the lesser heat involves the necessity of a greater amount of food, an increased temperature, on the other hand, produces an increased consumption of water, and, in consequence, the increased transudation of water through the skin of the animal, produces a loss of heat of the body by conduction and radiation.

The result showed that the food consumed was slightly greater than that required to keep the body in *statu quo* along with a normal growth of wool, but not to an extent which had any real significance. The atmosphere contributed only one-sixth part to the material received, but, on the other hand, laid claim to nearly one-half of the material excreted. More than one-half of the organic substance of the food fell, directly or indirectly, to the process of respiration, while the growth of new wool absorbed not one per cent. of it. About eight-ninths of the residue were found in the fæces and one-ninth in the urine.

The oxygen excreted in the form of carbonic acid was nearly equal to that removed from the atmosphere, which is a general characteristic of herbivorous animals. The distribution of various mineral constituents of food, on their reappearance in the fæces and urine, corresponds, on the whole, though not exactly, with their respective solubilities and dyalitic relations. The two alkaline earths, lime and magnesia, appeared in relatively large proportions in the fæces—the lime in greater proportion than the magnesia. Similarly with the two alkalies and the urine, the potash was recovered therefrom in greater proportion than the soda. Of the phosphoric acid scarcely more than a trace was found in the urine.

Humate of ammonia.—It has already been observed that plants grown on soil rich in silica and poor in humus contain less silica in their ash than those grown on soil poor in silica but rich in humus. Since an excess of silica is always present in soil, the amount taken up by a plant must clearly depend on other circumstances than the quantity at its disposal. Thénard has recently thrown light on the subject, by showing that humic acid forms, with ammonia and silica, very permanent acid compounds. These compounds are soluble in very dilute alkali, from which solution they can be separated unchanged. They lose nitrogen only at a high temperature. Humic acid does not combine with silica unless ammonia be present. It appears probable from these considerations that humic acid plays an important part in the economy of plant-growth. When seeds germinate on wet blotting-paper, a brown zone, having the reactions of humus, forms at some distance from the seed. The author concludes that humus is produced in this case from a soluble colorless body by the action of the atmosphere.

PREPARATION OF BUTTER.—It is quite a common belief that butter can only be made from sour milk, and chemists explain this on the ground that acidity is necessary to destroy the membrane which envelopes the butter molecules, so that they are set free to combine with each other after shaking. Mr. E. H. Baumhauer thinks he has disproved this theory by the following experiment: He first carried fresh milk to his laboratory without shaking or exposing it; this he divided in four portions of half a gallon each, placing them in bottles of one gallon capacity. One he left neutral, viz, as it came from the cow; one was acidulated with lactic acid; one made slightly alkaline with carbonate of potash, (this became acid during the manipulation;) and the fourth received a greater quantity of carbonate of potash, and remained alkaline throughout. The temperature was about 70° Fahrenheit. These bottles were shaken violently for one minute by four men. When at rest wart-like grains adhered to the glass, which, under the microscope, looked like drops of fat of oval, but irregular shape, somewhat like mulberries. From minute to minute the shaking was interrupted; the globules uniformly increased, and after eighteen minutes yellow butter was obtained in all the bottles, in little masses like peas. According to our author, the lactic acid could have had no influence in dissolving the membranes of the globules, and, in fact, he doubts the existence of such membranes. He thinks that shaking at the proper temperature combines the floating particles of butter; when the milk is too cold no butter forms; when too warm, a kind of emulsion is obtained, which, at a low temperature, hardens, but is white and less translucent than good yellow butter. Mr. Baumhauer promises the best success in butter-making whenever proper attention is given to the temperature of the milk, which ought to be between the narrow limits of 65° to 70° Fahrenheit.

PROPER KIND OF WATER FOR WASHING WOOL.—Professor Trommer, of the Agricultural Academy in Eldena, in reference to the importance of the quality and chemical composition of the water used for washing the wool of sheep, whether before or after shearing, calls attention to the fact that the matter to be removed by washing is quite complex, and consists, in the main, of the non-volatile portion of the sweat, the grease of the wool, abrasions of the epidermis, the dust from the surroundings, and the dirt from the excretions of the animal. It has an alkaline reaction from the prevalence of potassium, either in the form of carbonate, or in its combination with grease as a kind of soap. Pure water readily dissolves these potash compounds, and the resulting solution is in itself a very good wash; but when the water contains lime, a decomposition takes place, and insoluble compounds of lime (either carbonate or soap of lime) precipitate upon the wool and are removed with the greatest difficulty Hence the necessity of avoiding calcareous water. Professor Trommer mentions an easy way to detect the presence of lime, viz: a solution of soap in alcohol, when poured into a tumbler of water, will make it rapidly turbid whenever it contains salts of lime, while pure water remains clear for some time. When, however, necessity compels us to the use of hard water, the addition of some alkali is recommended, which shall precipitate the lime in solution as an insoluble carbonate. Caustic soda is the cheapest for that purpose. The author enumerates some of the advantages arising from the washing of the wool after being shorn, remarking that the quantity of water necessary for the operation being so much less, its qualities can be corrected much more easily and with less expense, and its temperature

made exactly suitable. Above all, the health of the animal will not be endangered, as is done by the old proceeding. The professor calculates that in the average 6,040 units of heat are consumed in the evaporation of the adhering water, which he thinks too heavy a tax on the animal economy.

NITROUS AND NITRIC ACIDS IN SOILS.—Investigations have lately been prosecuted by Chabrier upon the presence and functions of nitrous acids in soils. The soils examined were finely powdered and passed through a sieve, and then bleached, according to the method adopted in the saltpeter works of Algiers, for the purpose of determining the percentage of nitrous and nitric acids. As the result, it was ascertained that all tilled soils contained nitrous acid. Nitric acid, as is well known, is accumulated, especially in dry weather, in the superficial strata of the earth, the reverse being the case with the nitrous acid. Hence, it would seem that the soluble nitrates ascend in the soil by capillarity in dry weather, when they are transformed, at least in part, into nitrates, which, on the other hand, are washed out by the rain. The water of the soil generally contains 1 part of nitrous acid to 25,000 parts of water; never more than 1 part in 5,000. Fields which have lain fallow contain little nitrous acid but much nitric acid; while, on the other hand, forest land contains moderate quantities of nitrous and but little nitric acid; and inundated clay no nitrous and but little nitric acid. The author is of the opinion that the nitric acid, in spite of its slight percentage, is of importance in the earlier periods of vegetation.

DISPOSAL OF THE NITROGEN OF MANURE.—From more than twenty years of experiment, Laws & Gilbert have ascertained that harvest plants do not by any means take up all the nitrogen which has been put into the soil in the form of manure, or of ammonia, or other concentrated substances. Even if land be manured with the same amount of nitrogenous matters, and the same plants be cultivated, not half of the nitrogen is abstracted from the manure. Of the remainder, a certain part is to be met with in the form of ammonia in the drainage water, and a considerably larger amount occurs therein as nitric acid, a large part of the nitrogen being abstracted from the manure in this way. Of what is left, however, a very considerable portion is accumulated in the soil, and is carried into its deeper strata.

SORBY ON TINTS OF FOLIAGE.—We have already referred to the investigations of Sorby in regard to the various tints of foliage, and especially to the change of color in the leaves in autumn; and in a late number of "Nature" we find a *résumé* by him, giving the present state of his inquiries on the subject. He separates the different coloring matters into five groups: first, the *chlorophyl* group, characterized by being insoluble in water, but soluble in alcohol and in bisulphide of carbon, and embracing three or four species; second, the *xanthophyl* group, containing several species, only two of which are common in leaves, one being more and the other less orange. They are characterized by being insoluble in water, and soluble in alcohol and in bisulphide of carbon, differing, however, from the members of the first-mentioned group in having peculiar spectra; third, the *erythrophyl* group, comprising a number of colors soluble in water, in alcohol, and in ether, but insoluble in bisulphide of carbon. Those met with in leaves are more or less purple, are made bluer by alkalies and redder by acids; and thus sometimes plants containing the same kind may vary more in tint, owing to a variation in the amount of free acid, than others colored by entirely different kinds. Among the species some have very interesting botanical

relationships, being so far found only in particular classes of plants. Fourth, the *chrysotannic* group, containing a considerable number of yellow colors, some so pale as to be nearly colorless, and others of a fine, dark, golden-yellow. They are soluble in water, in alcohol, and in ether, but not in bisulphide of carbon. Of these there are two sub-groups, one in which a dark color is produced with ferric salts, constituting the tannic acid sub-group, and the other giving no such reaction, and forming the chrysophyl sub-group. In both sub-groups the intensity of color is usually greatly increased by partial oxidization, and they are thus altered into colors of the following group. Fifth, the *phäiophyl* group, which comprises a number of colors insoluble in bisulphide of carbon, and of very variable solubility in water or alcohol. These are in that state of oxidization which has a maximum intensity of color, and are simply decolorized by further oxidization. Our author proceeds to state that the numerous tints of foliage depend almost entirely on the relative and absolute amount of the various colors of these different groups, although all their relationships cannot at present be explained.

The color of green leaves is mainly due to a mixture of chlorophyl and xanthophyl, and the variation in the relative and absolute amount of these easily accounts for the darker and brighter greens. The tints are also much modified by the presence of colors of the erythrophyl group, which, according to circumstances, may give rise to lighter or darker browns, approaching to black or to reds. Healthy unchanged leaves also contain various substances belonging to the chrysotannic group; but in many cases when these belong to the more typical kinds of tannic acid, their color is so faint that they have little or no influence on the general appearance of the leaves.

On the approach of autumn, before the leaves have withered, the foliage of different plants presents an exceedingly variable mixture of chlorophyl, xanthophyl, and erythrophyl, with the different members of the chrysotannin group, and it is to the changes which occur in some or all of these substances that the very variable tints of autumn are due. The most striking of these depend on the alteration of the chlorophyl. So long as it remains green the production of the bright reds and yellows is impossible; but when it disappears, the yellow color of the xanthophyl is made apparent, and if much erythrophyl be present or contemporaneously developed, its color, combined with this yellow, gives rise to scarlet or red. In many cases, however, the chlorophyl does not disappear, but is changed into the dark olive modification, easily prepared artificially by the action of acids on the more green shades; and when this is present, only dull and unattractive tints can be produced. We may thus easily understand why the special tints of early autumn are yellows and reds, or dull and dark greens. In these changes the various pale-yellow substances of the chrysotannin group remain comparatively unaltered, and even sometimes increase in quantity, but they soon pass into the much darker red-browns of the phaiophyl group, while the erythrophyl fades, and thus later in the autumn the most striking tints are the brighter or the duller browns, characteristic of the different kinds of plants or trees.

As far as we are able to judge from the various facts described above, we must look, according to Mr. Sorby, upon the more characteristic tints of the foliage of early spring as evidence of the not yet matured vital powers of the plant. In summer the deeper and clearer greens are evidence of full vigor and high vitality, which not only resist but also actually overcome the powerful affinity of oxygen. Later in the season the vital powers are diminished, and partial changes occur; but

the affinity of the oxygen of the atmosphere is nearly balanced by the weakened, though not destroyed, vitality. At this stage the beautiful red and yellow tints are developed, which produce so fine an effect in certain kinds of scenery. Then comes more complete death, when the affinity of oxygen acts without any opposition, and the various brown tints of later autumn make their appearance, due to changes which we can imitate in our experiments with dead compounds.

Hydrated lime on water-plants.—Bauer found small crystals on confervæ in a fresh-water pond, which, on further examination, he discovered to consist of a hydrate of the carbonate of lime, containing five molecules of water, precisely similar to those first discovered by Pelouze in a solution of lime in sugar, and subsequently detected in a well-tube. This hydrate is distinguished by the peculiarity of losing its water at a temperature higher than 59° F., even when under water.

Sub-tropical gardening in England.—One of the most successful attempts at sub-tropical gardening in England is on the estate of Mr. Robert Were Fox, F. R. S., at Penjerrich, near Falmouth, in Cornwall. The temperature is here extremely mild in winter, the thermometer never falling below the freezing-point for more than two or three nights in succession, and hardly ever below 30° F., and snow never lying on the ground. Many trees and shrubs which are only seen in hot-houses in other parts of England here grow to perfection out of doors. The hydrangeas, covered with magnificent masses of blue flowers, here form splendid banks by the side of a stream running through the grounds, the small lakes in which are covered with several exotic species of water-lily, and the grass by the side carpeted with the selaginelle, which forms such a favorite bed for ferns in green-houses. There is a specimen of rhododendron 180 feet in circumference, and the camellias are everywhere loaded with fruit. The dragon's-blood tree (*Dracæna draco*) grows well out of doors, as also does the Australian gum tree, (*Eucalyptus globulus.*) There is a magnificent specimen of the camphor-tree, (*Laurus camphora,*) and several of the rare *Benthamia.* Several marmosets are allowed free liberty in the grounds, climbing to the tops of the highest trees, and always returning to the house at night. At a spot on Falmouth Harbor called Flushing, the temperature through the year is even still more equable, and the establishment of a tropical garden there would probably be attended with the most successful results.

The jardin d'essai in Algiers.—The French government established many years ago in Algeria a "jardin d'essai," in which all plants likely to be easily grown in Algeria, and which might be useful either for their ornamentation or from their economic value, should be kept for distribution or for sale. The Société Générale Algérienne has now the control of these gardens, and, under the able management of its present president, M. Auguste Rivère, they have attained great interest and importance. An avenue was planted in 1847, which now consists of about eighty trees of the date-palm, from 20 to 50 feet high, and about one hundred and fifty of the dragon's-blood tree, (*Dracæna draco,*) about 8 feet in height. All the trees were, in last December, in full flower or fruit. Among the more remarkable of the smaller avenues is one formed of bamboo, (*Bambusa arundinacea,*) planted in 1863, and forming an immense mass of foliage, the stems supporting which are from 40 to 50 feet high; and another formed of about one hundred plants of *Chamærops excelsa*, each being about 10 feet in height; other palms which flourish

to perfection are *Caryota urens* and *C. Cumingii*, growing 15 feet high and covered with fruit; *Oreodoxa regia*, from Cuba; several plants upward of 25 feet in height, and a plant of *Juboa spectabilis* 12 feet high. There is a small forest of *Anona cherimoya* in full fruit, which is nearly as good as that of the closely related species which yields the custard-apple. Near this is an immense tree, some 30 feet in height, covered with fruit of the Avocado pear, (*Persea gratissima*,) and at its feet a quantity of guava-trees (*Pisidium cattleyanus*) crowded with its perfectly ripe, large, pear-shaped, golden fruit. In the New Holland district of the garden are different species of acacia, many of them 20 to 25 feet in height, and magnificent trees of several genera of Proteaceæ, *Banksia*, *Hokea*, and *Grevillea;* and trees of *Eucalyptus globulus* planted in 1862, and then only a few inches high, which are now about 40 feet in height, and over 4½ feet in circumference. There is a specimen of *Araucaria excelsa* about 60 feet high, and measuring a little over 9 feet in circumference at its base.

ARTIFICIAL PREPARATION OF MILK.—One of the latest enterprises in organic chemistry consists in the preparation of artificial milk, which has been attempted by Dubrunfaut, and which he claims to have accomplished by emulsifying fatty matters with an artificial serum. This is done as follows: 40 or 50 grams of succharine matter (lactin, cane-sugar, or glucose,) 20 or 30 grams of dried albumen. (the dried white of egg as met with in Paris,) and 1 or 2 grams of crystals of soda corbonate, are dissolved in a half liter of water, and the whole is emulsified with 50 or 60 grams of olive-oil, or other comestible fatty matter. The emulsification takes place best at a moderate temperature, that of 50° or 60° being sufficient. The liquid thus prepared has the appearance of cream, and requires to be mixed with twice its volume of water to acquire the consistence and aspect of milk. To prepare a fluid approaching cream in its qualities, gelatin is substituted for albumen; 100 grams of fat are emulsified in a liter of serum, containing 2 or 3 grams of gelatin. Artificial cream prepared in this way, shows no tendency to separate into fat or serum.

Gaudin, in discussing the preceding suggestion, gives his testimony as to the depriving fats of all unpleasant odor by mere subjection to an appropriate temperature. He also states that very good artificial milk can be prepared from bones rich in fat, by purifying this fat by means of superheated steam, and combining the fat thus obtained with gelatin. This milk is, he says, almost like that of the cow; and, when kept, acquires first the odor of sour milk, then that of cheese. The gelatin in it represents the caseine; the fat, the butter; the sugar, the sugar of milk. It serves for the preparation of coffee and chocolate, of soups and creams of excellent flavor, and its cost is but trifling.

MARKET PRICES FOR FARM PRODUCTS.

Articles.	November.	December.
NEW YORK.		
Flour, State ..... per barrel..	$6 00 to $7 30	$5 80 to $7 10
western ..... do.....	6 00 to 9 25	5 80 to 9 25
Wheat, No. 1 spring ..... per bushel..	1 54 to 1 55	.....
No. 2 spring ..... do.....	1 49 to 1 52	1 50 to 1 55
winter and amber, western... do.....	1 55 to 1 65	1 58 to 1 67
Corn, new western, mixed ..... do.....	75 to ———	76 to 78
old western, mixed ..... do.....	76 to 77	78½ to 80
Rye ..... do.....	Nominal.	90 to ———
Barley ..... do.....	72½ to 1 02	90 to 1 30
Oats, western, mixed ..... do.....	50 to 51	55 to 77
State ..... do.....	52 to ———	54 to ———
Hay, shipping qualities ..... per ton...	22 50 to ———	22 00 to ———
prime ..... do.....	24 00 to 31 00	24 00 to 32 00
Pork, mess ..... per barrel..	13 00 to ———	13 45 to 13 50
prime ..... do.....	9 50 to 10 00	10 50 to ———
Beef, mess ..... do.....	7 00 to 11 00	7 00 to 11 00
extra mess ..... do.....	11 00 to 14 00	11 00 to 14 00
Lard ..... per pound..	9½ to 10¼	9 to 9¾
Butter, western ..... do.....	12 to 23	12 to 23
State ..... do.....	15 to 34	21 to 33
Cheese, dairy ..... do.....	11 to 12½	11 to 12½
factory ..... do.....	12 to 13¾	12 to 14
Cotton, ordinary ..... do.....	16⅜ to 18½	16¼ to 18⅜
middling ..... do.....	18⅜ to 20¾	18⅝ to 20⅞
Tobacco, sound lugs, light grades ... do.....	7½ to 8	7½ to 8
sound lugs, heavy grades ... do.....	7⅜ to 8¼	7⅜ to 8¾
common leaf, light grades... do.....	8¼ to 9¼	8¼ to 9¼
common leaf, heavy grades.. do.....	8½ to 10	8½ to 10
Wool, combing fleece ..... do.....	.....	.....
extra, pulled ..... do.....	60 to ———	48 to 61
Texas, common to medium ..... do.....	.....	32 to ———
California, common ..... do.....	20 to 37½	20 to 43
BOSTON.		
Flour, western, superfine ..... per barrel..	5 75 to 6 50	5 50 to 5 75
extra ..... do.....	7 25 to 7 50	7 25 to 7 75
choice ..... do.....	9 00 to 10 25	8 00 to 10 00
Corn, yellow ..... per bushel..	88 to 90	86 to 87
mixed ..... do.....	86 to 88	82 to 85
Oats ..... do.....	50 to 57	51 to 57
Rye ..... do.....	95 to 1 00	95 to 1 00
Barley ..... do.....	90 to 1 12	75 to 95
Pork, mess ..... per barrel..	14 25 to 14 50	13 50 to 15 00
prime ..... do.....	11 00 to 12 00	11 00 to 12 50
Beef, mess ..... do.....	8 00 to 12 00	10 00 to 12 00
extra mess ..... do.....	12 00 to 13 00	12 00 to 13 00
Lard ..... per pound..	10¼ to 10¾	9½ to 10
Butter, New York and Vermont ... do.....	18 to 33	18 to 33
Canada ..... do.....	20 to 30	20 to 30
western ..... do.....	10 to 29	12 to 28
Cheese, eastern factory ..... do.....	10 to 14	10 to 14½
Ohio factory ..... do.....	10 to 13	10 to 13½
Hay, prime ..... per ton...	20 00 to 32 00	20 00 to 33 00
Wool, western ..... per pound..	55 to 75	56 to 70
combing, and delaine fleeces... do.....	68 to 75	68 to 72
tub ..... do.....	.....	72 to 105
pulled ..... do.....	40 to 75	40 to 75

Market prices for farm products—Continued.

Articles.	November.	December.
CHICAGO.		
Flour, winter, extra ..... per barrel..	$7 50 to $8 25	$8 00 to ———
spring, extra ..... do.....	6 75 to 7 55	6 00 to $7 00
Wheat, No. 1 spring ..... per bushel..	1 22½ to ———	1 23½ to ———
No. 2 spring ..... do.....	1 19 to 1 20½	1 18½ to 1 19½
No. 3 spring ..... do.....	1 12½ to ———	1 09 to ———
Corn, No. 2 ..... do.....	47½ to 48¾	40¾ to 41½
rejected ..... do.....	44 to 45	38¾ to 40
no grade ..... do.....	.....	.....
Oats, No. 2 ..... do.....	30 to 30¼	31⅜ to 32
rejected ..... do.....	26½ to 27	29 to 29½
Hay, timothy and clover, (on track)..per ton..	13 00 to 14 00	14 00 to 15 00
prairie ..... do.....	9 00 to 10 00	10 00 to 11 50
Pork, mess ..... per barrel..	12 75 to 13 00	13 00 to 13 10
extra mess ..... do.....	.....	.....
Beef, mess ..... do.....	8 25 to ———	.....
extra mess ..... do.....	9 25 to 9 50	10 00 to ———
Lard ..... per pound..	8⅝ to 8¾	8⅝ to 8¾
Butter, firkin and tub ..... do.....	15 to 20	14 to 18
extra ..... do.....	22 to 25	23 to 25
Cheese, New York factory ..... do.....	15 to 15½	15 to 15½
western factory ..... do.....	12 to 14	13 to 14
western reserve ..... do.....	.....	.....
Wool, medium fleece ..... do.....	.....	55 to 62
unwashed, medium ..... do.....	.....	32 to 42
tub ..... do.....	.....	61 to 75
CINCINNATI.		
Flour, family ..... per barrel..	6 75 to 6 90	6 60 to 6 90
extra ..... do.....	6 30 to 6 50	6 50 to 6 60
superfine ..... do.....	5 75 to 5 90	5 75 to 6 00
low grades ..... do.....	4 50 to 5 00	4 50 to 5 25
Wheat, No. 1 white ..... per bushel..	1 55 to 1 60	1 55 to 1 60
No. 2 white ..... do.....	1 50 to 1 55	1 50 to 1 55
No. 1 red ..... do.....	1 41 to 1 43	1 43 to 1 45
No. 2 red ..... do.....	1 40 to ———	1 40 to 1 42
Corn No. 1 ..... do.....	56 to ———	47 to ———
new, ear ..... do.....	53 to 54	.....
Rye, No. 1 ..... do.....	78 to ———	79 to 80
No. 2 ..... do.....	76 to ———	77 to 78
rejected ..... do.....	.....	.....
Barley, No. 1 ..... do.....	80 to ———	88 to 90
No. 1 State ..... do.....	70 to ———	75 to 80
Oats, No. 1, mixed ..... do.....	34 to 36	37 to 38
No. 2, mixed ..... do.....	35 to ———	36 to ———
Hay, tight-pressed ..... per ton...	16 00 to 17 00	15 00 to 19 00
loose ..... do.....	17 00 to 18 00	17 00 to 21 00
Pork, mess ..... per barrel..	12 00 to 12 50	12 50 to 13 50
prime mess ..... do.....	.....	.....
Lard, prime, steam ..... per pound..	8¾ to 8⅞	8⅜ to 8½
Butter, choice Ohio ..... do.....	16 to 22	23 to 25
fair to good ..... do.....	.....	16 to 18
Cheese, western reserve ..... do.....	13 to 13½	.....
factory ..... do.....	14 to 14½	14 to 15
Cotton, ordinary ..... do.....	14½ to 16½	14 to 17⅜
middling ..... do.....	17 to 18¾	17¾ to 19¼
Tobacco, lugs, West Virginia ..... do.....	.....	5 to 6
lugs, Kentucky ..... do.....	9¼ to 13	9¼ to 11
common leaf, West Virginia..do.....	.....	8 to 9
common leaf, Kentucky ..... do.....	13 to 16	13 to 16
Wool, tub-washed ..... do.....	65 to 70	65 to 70

Market prices for farm products—Continued.

Articles.	November.	December.
CINCINNATI—Continued.		
Wool, fleece-washed ..... per pound..	$0 50 to $0 55	$0 42 to $0 55
unwashed ..... do.....	42 to 45	42 to 45
pulled ..... do.....	50 to 52	50 to 52
ST. LOUIS.		
Flour, superfine ..... per barrel..	5 00 to 5 25	5 10 to ———
extras ..... do.....	5 50 to 6 90	5 75 to 7 00
choice ..... do.....	7 00 to 7 25	7 50 to 8 00
Wheat, spring ..... per bushel..	1 18 to ———	1 32 to 1 33
winter No. 1 ..... do.....	1 60 to 1 70	.....
winter No. 2 ..... do.....	1 50 to 1 53	1 55 to ———
winter No. 3 ..... do.....	1 40 to 1 45	1 44 to 1 45
red ..... do.....	1 30 to ———	1 33 to 1 55
Corn, mixed ..... do.....	41 to 41½	44 to 46
yellow ..... do.....	42 to ———	46 to ———
Rye ..... do.....	61 to 63½	70 to 73
Barley, winter ..... do.....	75 to 80	75 to ———
spring ..... do.....	85 to ———	54 to 75
Oats, mixed ..... do.....	37 to 38	36 to 38
yellow ..... do.....	.....	.....
Hay ..... per ton..	20 00 to ———	22 00 to 26 50
Pork, mess ..... per barrel..	12 75 to 13 00	13 00 to ———
Lard, tierce ..... per pound..	9¼ to 9½	8½ to ———
keg ..... do.....	10½ to 10¾	.....
Butter, choice ..... do.....	26 to 29	23 to 28
fair to medium ..... do.....	20 to 24	17 to 25
Cheese, factory ..... do.....	14 to 15½	14½ to 15
Cotton, middling ..... do.....	17 to 17½	17½ to ———
Tobacco, sound lugs ..... per cwt..	7 00 to 8 50	6 75 to 8 00
common leaf ..... do.....	8 00 to 9 00	8 00 to 8 75
medium to good leaf ..... do.....	9 00 to 12 00	9 00 to 12 00
Wool, tub-washed ..... per pound..	60 to 69	58 to 67
fleece-washed ..... do.....	48 to 56	48 to 56
combing ..... do.....	35 to 43½	42 to 43½
pulled ..... do.....	.....	.....
NEW ORLEANS.		
Flour, superfine ..... per barrel..	6 00 to ———	.....
extras, (according to grade) .... do.....	6 75 to 8 50	7 30 to 9 00
Corn, mixed ..... per bushel..	88 to 90	75 to 78
yellow ..... do.....	82½ to ———	73 to 77
white ..... do.....	93 to 94	78 to ———
Oats, choice ..... do.....	52½ to 53	53 to 55
Hay, choice ..... per ton..	34 00 to 35 00	40 00 to 42 00
prime ..... do.....	33 00 to ———	40 00 to ———
Pork, mess ..... per barrel..	15 25 to 15 75	14 50 to 15 00
Lard, tierce ..... per pound..	10½ to ———	8⅞ to 10¾
keg ..... do.....	12 to ———	10 to 10¼
Butter, choice western ..... do.....	22 to 24	22 to 25
choice northern ..... do.....	32 to 33	33 to 34
common northern ..... do.....	.....	.....
Cheese, choice factory ..... do.....	14 to 16	14 to 15
western reserve ..... do.....	12½ to ———	12½ to ———
Cotton, ordinary ..... do.....	17½ to 17¾	16 to 17⅜
low middling ..... do.....	17½ to 18	18 to 18¼
middling ..... do.....	18⅛ to 18¼	18½ to 18⅞
Tobacco, lugs ..... do.....	7 to 8	7 to 8
low leaf ..... do.....	8 to 8½	8 to 8½
medium leaf ..... do.....	9 to ———	9 to 9½

Market prices for farm products—Continued.

Articles.	November.	December.
SAN FRANCISCO.		
Flour, superfine.....per barrel..	$6 50 to $7 00	$6 00 to $6 25
extras.....do.....	7 25 to 8 00	6 75 to 7 75
Wheat, State.....per cental..	2 50 to 2 65	2 40 to 2 65
Oregon.....do.....	2 50 to 2 65	2 40 to 2 65
Corn, white.....do.....	2 00 to 2 05	2 10 to ———
yellow.....do.....	2 00 to 2 05	2 00 to ———
Hay, State.....per ton..	22 50 to ———	25 00 to ———
Pork, mess.....per barrel..	19 00 to 22 00	20 00 to ———
prime.....do.....	18 00 to 18 50	18 50 to ———
Beef, mess.....do.....	14 00 to 17 00	17 00 to ———
Lard.....per pound..	12 to 13	11½ to 13
Butter, State.....do.....	35 to 50	35 to 50
Oregon.....do.....	20 to 25	20 to 25
overland.....do.....	20 to 35	20 to 35
Cheese.....do.....	12½ to 17	15 to 17
Wool, choice.....do.....	32 to 35	32 to 35
inferior to common.....do.....	18 to 25	18 to 20

ITEMS FROM VARIOUS SOURCES.

IMPROVEMENT OF AMERICAN COTTON.—Mr. S. G. Godfrey, of Cheraw, Chesterfield County, South Carolina, responds to some interrogations on this subject, from this Department, as follows:

The experiments of our cotton planters recently have all aimed at an increase of production, without regard to the quality of staple, and with success, as is shown by the crops of the past few years, when, with our imperfect system of labor, we have been enabled to produce crops which will compare favorably with the largest crops made before the war, with the most perfect system of labor. I say "without regard to quality," because the most prolific variety of cotton with us, and the most popular (the Dickson,) is decidedly the shortest and coarsest staple we have. I have thought for some time that it would be to our interest to turn our attention more to the improvement of our staple, in order to place our prominence over the foreign staple on a surer foundation in the markets of Europe. I am afraid we cannot look to the farmer to make the start in this matter. So long as the Dickson cotton commands as high prices in the market as the Peeler and other improved varieties, the farmer will plant the Dickson, because it has the reputation of being the most productive. The Southern cotton farmer is poor, and cannot afford to risk experiments; besides, he is not a speculator; he is accustomed to make his money by hard labor. We cannot expect him to go to the expense and take the trouble to change his seed unless he is paid for it. We will have to look to the cotton dealers. If they would pay a higher price for improved cotton, I think the thing could be accomplished. Let the improved variety be quoted every day in the papers a few cents per pound higher than common uplands. The farmers would soon see it, would get improved seed, and in a few years we would have a staple as much better than our present cotton as the latter is now the superior of the Surats. The Peeler is the only improved variety that I am acquainted with. I have tried it three years, and find that it produces equally as much to the acre, and matures as well as our ordinary variety. The staple is finer and at least one-third longer.

JUTE.—Mr. John A. Bassett, of Salem, Massachusetts, in a note to this Department, accompanying specimens of jute manufacture, states that—

Cotten is baled almost exclusively in gunny cloth. It requires seven yards to the bale. All this, with the exception of 4,000,000 yards, is imported. The domestic cloth is preferred to the imported, and brings a better price in the market. All the imported cloth is made from long-fiber jute. The use of the butts for cloth making is the result of improvements in machinery made by Mr. John R. Norfolk, of this city. The value of the importation last year was something over $5,000,000. The outer bark of the jute plant is difficult to remove, and nothing has yet been devised to supersede hand labor for this purpose. If the plant is to be cultivated in this country, a machine for this purpose will be indispensable. In India, with labor at a few cents per day, the fiber is produced at less than 1 cent per pound. The average cost of jute butts here is

4½ cents per pound; long jute, 6 cents. The cloth weighs 2¼ to 2½ pounds to the yard of 45 inches in width. The price ranges from 21 to 35 cents per yard, according to the season in which it is sold. In the bagging season it brings the highest price. The imported cloth is always a few cents cheaper. There are probably not over 200 looms in this country producing this cloth, and their existence depends entirely upon the tariff on imported gunny cloth.

THE PEA-NUT CROP OF VIRGINIA IN 1870.—The statement of Mr. T. B. Bowland, of Norfolk, Virginia, of the amount of the Virginia peanut crop for the year ended October 1, 1871, reports that the first consignment of the crop was received October 10, 1870, and were quite green, and that sales were made during the month at $1 10 to $1 50 per bushel. The highest prices were reached in March, $2 65 to $2 75, with a few sales of fancy at $3 per bushel. In June prices fell to $1 50 and $2, with few sales. Nothing could be done in them in July, and little in August. In September the trade revived sufficiently to close out the stock on hand at $2 to $2 25 per bushel. The receipts of peanuts at Norfolk in 1868–'69 amounted to 139,178 bags; in 1869–'70, to 90,112 bags; and in 1870–'71, to 65,150 bags. The crop of 1868–'69 averaged about 3 bushels of 22 pounds to the bag; that of 1896–'70 was poor in quality, very light in weight, and barely averaged 2½ bushels per bag; the crop of 1870–'71 was good and heavy, and averaged fully three bushels to the bag. The statement estimates 10,000 bags taken elsewhere, which makes the total crop of Virginia 75,150 bags, or 225,450 bushels of 22 pounds. Mr. B. states that the present crop is large and of excellent quality.

PREMIUMS FOR TOBACCO.—A committee of the St. Louis Tobacco Association have raised $10,000, to be awarded in premiums to tobacco growers of the West and South, with a view to the encouragement of this culture in those sections. The premiums are to be offered in classes as follows: 1st class, factory-dried dark leaf; 2d, dark and medium bright manufacturing leaf; 3d, bright manufacturing leaf; 4th, cutting tobacco; 5th, largest crop by any one planter; 6th, manufacturing leaf; 7th, factory-dried leaf; 8th, cutting leaf; 9th, black wrappers; 10th, factory-dried leaf. Premiums ranging from $1,000 down to $100 for the best in the classes named; and from $700 to $50 for less quantity and second best. Competition in the 1st, 2d, 3d, 4th, and 5th classes, open only to Missouri, Kansas, and Illinois; in 6th and 7th classes, open only to planters. All tobacco entered for premium is to be exhibited at St. Louis under the direction of the association.

POTASH.—The use of this product in agriculture has been increasing rapidly during the past few years, and the article is becoming one of considerable commercial importance, while the natural supply is being developed in practically exhaustless quantities. Vast deposits have been opened at the Stassfurth salt works in Germany, the magnitude of which may be inferred from the fact that at the present time more potash is being furnished from these mines—where, a dozen years ago, it was not supposed that a ton could be produced—than from the wood-ash sources of the whole world, 30,000 tons of the muriate of potash having been manufactured there during the year 1870. The surface salts (which hold the potash) at these mines are capable of supplying millions of tons. It is probable that the salt mines of this country will be found, upon careful examination, to contain potash, and we may confidently look for the rapid cheapening of this useful product. The exports of ashes, pot and pearl, from the United States for the fiscal year 1870–'71 were 13,169 hundred-weight, valued at $103,249; in 1869–

'70, 22,030 hundred-weight, valued at $256,330; and in 1868–'69, 20,686 hundred-weight, valued at $161,731.

ASPHALT WALKS.—An economical asphalting of walks is suggested in England, as, and upon trial, is said to have cost only 3*d.* per yard. The materials used were merely tar and burned turf ashes. The ashes were burned in large heaps in the course of converting old pastures into arable lands. The cost of burning 20 cubic yards was rather under 2*d.* per yard after the ground was plowed; the tar cost 1*d.* per gallon. The ashes were procured from the middle of a heap of a bright red color. About 450 square yards of walk were asphalted with 336 gallons of tar, rather less than one gallon per yard. The walks were quite firm with fine gravel before being operated upon with tar and ashes; only 10 cubic yards of ashes were required. The work was done by various systems. A strong stand, about a foot high, was placed against the ashes, shot down in cart-loads, and the barrels rolled upon the stand as wanted; a common pail was used to pour the tar upon the ashes; about a barrowful of ashes was mixed with the tar until saturated, so that, when patted with the back of a shovel, the mixture did not adhere to it; the mixture was then wheeled to the spot where required, laid upon the walk about an inch thick, patted down smooth, and sprinkled with dry ashes. The work was done in June and July, so that the surface generally became dry enough to roll in about half a day. The rolling cannot be overdone, and may be continued day after day for a week. The other methods were merely to hoe the walks, pour tar on them and then to throw the ashes over the tar, rolling as in the former process; or, by picking up the surface about two inches, smoothing down, applying the tar to soak the gravel, then adding dry ashes on the surface and rolling. The hoeing or picking of the walks is a much quicker process than by mixing the tar and ashes together first, but the latter makes the most finished job. A man may asphalt about 40 square yards per day.

THE HOG CROP IN MISSOURI.—The Missouri Democrat publishes a list of about 2,000 hog-growers of that State, with the number of hogs on hand, the latter footing up 65,914, against 53,041 last year, an increase of about 24 per cent. The number of hogs listed for taxation in the States of Ohio, Illinois, Missouri, Iowa, and Kentucky, in April, which includes only those six months old, is stated, on the authority of the several State auditors, to be 9,541,706, against 7,836,121 last year, an increase of 21¾ per cent. The average prices from 1850 to 1860, at St. Louis, were, for mess pork, $14 62½ per barrel; clear sides, 8½ cents per pound; shoulders, 6¼ cents per pound; lard 9⅗ cents per pound. From 1860 to 1870, mess pork, $24 73½; clear sides, 15½ cents per pound; shoulders, 11 9/20 cents per pound; lard, 12 3/10 cents per pound. The average price of live hogs from 1850 to 1860 is stated to have been $4 65 to $5 43; from 1861 to 1870, $6 11 to $7 76. The lowest and highest yearly average prices of live hogs, per 100 pounds, in St. Louis, for 21 years, are given as follows:

1850	$2 60 to $3 27	1857	$6 12 to $7 23	1864	$7 52 to $10 48
1851	3 42 to 4 65	1858	4 70 to 5 67	1865	8 45 to 10 94
1852	4 52 to 5 50	1859	5 06 to 6 71	1866	7 48 to 8 90
1853	4 31 to 5 19	1860	5 19 to 6 71	1867	5 46 to 6 83
1854	3 80 to 4 65	1861	4 02 to 5 10	1868	6 13 to 8 17
1855	4 80 to 6 25	1862	3 05 to 3 80	1869	8 66 to 10 57
1856	4 65 to 5 46	1863	3 75 to 5 19	1870	6 66 to 7 65

DISEASES OF HOGS.—Mr. Walter Barnes, of Larissa, Cherokee County, Texas, writes to the Department as follows:

In May and June of 1870, the black jack, red oak, and hickory trees were infested with the large, black, striped caterpillar, which, on coming to maturity, fell to the ground, to burrow and to change to the chrysalis. Hogs ate them with avidity, and nearly all the sows lost their pigs before yeaning time. In the fall there was a large bitter mast, and many hogs had the kidney worm; I know of none that died. They would be weak in the loins, frequently so weak as to drag the hind legs on the ground, for five to ten days, then gradually get stronger, and after a month or two get well, but with sunken loin and shrunken hams. I have now several in the latter condition, which I would not kill last winter, although they were fat and never got thin. I killed one hog, of which one kidney was entirely gone, the other only a skin full of living worms, with not a particle of the kidney tissue. I am feeding over two hundred head in all. Occasionally have a case of cholera.

[The caterpillar mentioned is probably an oak-feeding insect, *Anisota* (*dryocampa*) *senatoria*, the larva of which answers this description. It changes into a yellowish-brown moth. I have never before heard of their injuring hogs; if so, it is a new fact.—T. G.]

SHEEP HUSBANDRY IN NEW MEXICO.—During the summer of 1870, Colonel P. R. Skinner transported from Connecticut to his residence, at Cimarron Seco, Colfax County, New Mexico, 50 Cotswold bucks, imported from the flock of Robert Garnes in England. These he placed in a sheep run, with 3,000 native merino ewes, in a locality of favorable conditions, both of pasture and climate, for the growth of the sheep. At the lambing season, about the 1st of May, his ewes were in as good flesh as was desirable at the time, and the lambs of superior size and quality. Many of them weighed from 12 to 14 pounds when dropped, and increased to 20 and 25 pounds at the age of seven or eight days. He thinks the grade bucks will make a more eligible cross than the pure blood, from the fact that the latter produces a lamb rather too large for the capacity of the New Mexican ewes. In order to guard against danger from this source, he was obliged to exercise very great care. The Mexican ewes averaged but 1½ pounds per fleece, while the Cotswold bucks averaged 11 pounds. He estimates that the half-bloods, next year, will average 5 pounds. He does not find it necessary to provide any food for his stock, except the grass which is abundant both in summer and winter.

SURFEIT OF CLOVER.—*West Charlotte, Vermont.*—In looking over the report of diseases in cattle in the monthly report, I am reminded of a sick cow on this farm in March last. She would be taken about 9 or 10 o'clock in the morning with dizziness—keep going backward in a circle, and if she turned to the right in her backward march would often lick her right shoulder, or if to the left she took a turn a similar action was observed. These spells lasted about two hours each day; she was very fat when first taken, and in half an hour would look like a mere skeleton, and before night no one could discover that anything had ailed her. It was discovered that the cause was feeding bright-green clover hay, which was discontinued in her case, and the fits ceased; but ever after, if a little clover hay was given her, she would have a fit just in proportion to the amount of hay given. She was bled once, which is all that was done for her, and now is apparently as well as any of the cows. Her milk, during her season of dizzy fits, had a greenish hue. When she was first taken her calf was a week or ten days old.

RAILROADS.—Poor's Manual for 1871-'72 reports number of miles of railroad in operation in the United States in 1850, 9,021; in 1860, 30,635; in 1870, 53,399. Constructed in the decade ended in 1850, 5,508 miles; in that ended in 1860, 21,614 miles; in that ended in 1870, 22,764 miles.

The building of railroads was seriously interrupted during the war, but from 1865 to 1870 a fresh impetus was given to all railroad enterprises. In 1870 there were 6,145 miles constructed—more than in the whole decade ended with 1850. In 1850 the net merchandise tonnage of all the railroads was estimated at 4,500,000 tons; in 1860 it was 18,500,000 tons; and in 1870 it was 72,500,000, exclusive of coals, ores, and similar freights, and 95,000,000 tons including these items. In 1850 the tonnage was 400 pounds per head of total population; in 1860 it was 1,200 pounds per head, and in 1870 it reached 3,816 pounds to each inhabitant. The value of the tonnage per head in 1850 was $29; in 1860, $84; and in 1870, $285. From 1850 to 1860 the increase in tonnage was 1¾ tons for each added head of population; from 1860 to 1870, the increase was more than four times as large, or nearly 8 tons. In 1850 the average earnings per mile were $4,000, or $1 55 per head of population; in 1860 they were $4,000 per mile, or $4 90 per head; and in 1870, $9,000 per mile, or $11 75 per head.

DIVERSIFIED INDUSTRY IN LOUISIANA.—Richard H. Day, president of the Louisiana State Agricultural Society, in a recent letter to this Department, says:

You are doubtless aware of the great wants of the South at the present time—labor, capital, and a diversified industry. The latter will eventually bring the two former. Heretofore the culture of cane and cotton has monopolized the entire attention of our people. It is only within the last year or two that the folly of this course has begun to be appreciated, and that other crops have been cultivated. The failure of the cotton crop this year will strengthen and confirm this appreciation, and give stability to the culture of other crops. It has been demonstrated by actual trial that even in this latitude apples, pears, peaches, and, indeed, almost every fruit, can be raised as successfully as in the North; and, when proper cultivation is given, as large crops of corn. I have been raising corn on a few acres consecutively every year since 1867 and every year increasing the yield without any commercial fertilizers. This year the yield was over 100 bushels to the acre.

CHINESE SUGAR-CANE.—S. F. Taft, corresponding secretary of New Mexico Horticultural Society, in a letter to this Department, says:

The Chinese sugar-cane seed is decidedly a good acquisition. Crystals like rock-candy formed in the sirup made from it; (I suppose this would be termed grape sugar.) No effort was made by any one to granulate it. Where grown upon the same ground with the common Chinese, white, black, and red imphee, the sirup was lighter-colored, and of decidedly superior flavor. It was tested by four persons upon four different soils, holding its superiority upon all; that upon the white-oak soil being superior in quality, that upon the bottoms yielding the greatest quantity. It stood up well this dry season; don't know how it will do in a wet one.

NORTH CAROLINA TRUCKERS.—A correspondent writing from Goldsborough, North Carolina, says that the country around that place affords great facilities for market-gardening and fruit-culture. The soil and climate are favorable, and the access to northern markets convenient and quick. The trucker can ship his vegetables and fruit from this point at 10½ a. m. and have them in Washington, in the market, at 6 a. m. the next day. The afternoon picking, shipped at 9 p. m., will be in New York at 5 p. m. the next day. Crops are claimed to be fifteen to twenty days earlier than in the vicinity of Norfolk, and only five to eight days later than Charleston, South Carolina, while shipping facilities are quicker.

FRUIT IN THE WALLA WALLA VALLEY.—Mr. Thomas K. McCoy, of Walla Walla, Washington Territory, writes that he has apples, peaches, pears, plums, and various berries, in bearing, and has taken out from the States during the past year forty varieties of peaches and six of apricots. He claims to have planted the first peach-pit in that valley, and has had

peaches eight years in succession. He pronounces his region the best fruit country he has ever seen.

THE DROUGHT IN UTAH.—William Fuller, secretary of Eastern Gardeners' Club, Salt Lake City, writes that "on Sunday, October 8, we had a storm of snow and rain which continued, with intermissions, until Monday morning. This was the first moisture of any amount that we have had since the 13th of May, with the exception of one or two light sprinklings. The continued drought caused our mountain streams to greatly diminish, and, as a consequence, many of our garden crops have suffered, and some trees have died."

Winter wheat in Nebraska.—Robert W. Furnas, president Nebraska State Board of Agriculture, in transmitting samples of Nebraska grains to this Department, states: "Our fall crops could not look better than now, (November 7.) Our farmers are discarding spring wheat almost entirely, and sowing fall wheat. Put in with drill and rolled, the success of fall wheat is no longer doubtful." Another correspondent at Groveland, Nebraska, says: "A good many farmers have sown a little winter wheat this fall, and more would have been put in if the seed could have been procured."

Improved swine in Iowa.—A correspondent in Iowa City, Johnson County, Iowa, writes that there is considerable interest felt in that section in the improving of stock, especially hogs. Poland-Chinas take the lead; Chester whites rank next. Sales of shoats: Poland-Chinas, $18 to $25, for breeders; Chester whites, $6 to $12, for breeders. Hog crop large and fat now, selling at $3 25 per cwt. Corn, 18 cents per bushel.

Cotton-culture in California.—The California Cotton Planters and Manufacturers' Association have purchased a large tract of land on Kern Island, in Kern County, for agricultural purposes, and propose to plant 1,000 acres in cotton the coming season, and several hundred acres in corn, potatoes, cabbages, onions, parsnips, carrots, &c. The prospectus of the company indulges in some rather extravagant calculations of product and profit of the area to be devoted to cotton-culture.

NOVEMBER WEATHER IN KING GEORGE COUNTY, VIRGINIA.—Our King George County, Virginia, correspondent writes as follows:

November is commonly one of the most pleasant months of the year in Eastern Virginia. The month just passed, however, has been exceptional. After the first week it was wet, rainy, and cloudy, and very unfavorable for our main farm work of this season, the gathering of the corn crop. The temperature has been low, falling with some regularity. There was very little ice formed until the last two days. Rains have been heavy and frequent. The mercury ranged from 70° on the 1st to 27° on the 30th. Rain-fall for the month, 3.62 inches. The average of the month for twenty-two years is 2.33 inches.

HEAVY YIELD OF WHEAT.—Mr. James Smith, of Cedarville, Washington Territory, writes to the Department as follows:

I send you a sample of wheat that I have raised the past season; 1,200 bushels on 26 acres of land, a trifle over 46 bushels to the acre. In the spring of 1870 the land was covered with brush and timber. I cleared the land the following summer, burnt it in August, got ready for sowing February 1, 1871, without plowing, and harrowed the seed in, finishing February 12. Finished thrashing September 7.

ITALIAN BEES IN UTAH.—A Utah correspondent writes that there were a number of Italian bees imported into that Territory last spring, and that they have thus far proved a decided success; in many instances, one hive producing four to six swarms, and 100 pounds of honey and upward. There is also a lively interest noted in relation to the importation of improved breeds of horses, cattle, sheep, and swine.

GRASSHOPPERS IN UTAH.—A correspondent in Cache County, Utah, writes that "the grasshoppers have not deposited any eggs in our vicinity, and we hope for better crop results next year."

DIVERSIFIED AGRICULTURE IN NORTH CAROLINA.—A correspondent in Halifax County, North Carolina, writes:

It is evident that the effort to make a large crop of cotton, to the exclusion of most other farm interests, is the cause of the extensive wastes of second-growth pines and gulleys so common to the eye. Many of our people are waking up to the fact, and, so far as their shattered resources admit, are adopting a mixed husbandry. Information on agricultural subjects is eagerly sought by the more intelligent, and the system of rotation of crops, with its necessary concomitants, is beginning to elicit inquiry.

PULASKI COUNTY, VIRGINIA.—A correspondent at Dublin writes:

This county is a beautiful blue-grass country, and can compare with almost any other region except Kentucky. The stock of fat cattle shipping to Baltimore and other points from this county has been large this fall. Superior coal is found in the county, and iron ore of good quality is abundant.

FISH-CULTURE IN ENGLAND.—It is stated that, under the care bestowed by various associations and the legislature, food fishes are rapidly increasing in numbers in the rivers and estuaries of Great Britain. The increase in the salmon supply is especially noted. The total quantity of salmon sold at Billingsgate during the year 1870 was 3,859,184 pounds, an increase of 224,784 pounds over the sales of 1869. The total value is given at £213,059, or about 27½ cents per pound. The increase of salmon is not confined to the great salmon rivers. The fishermen of the Cornish rivers, the Fowey and the Looe, agree that where there was one salmon or salmon-trout ten years ago, there are fifty now. Mr. Cuthbert W. Johnson concludes an article upon the subject by remarking that—

It is evident that in protecting the fish in their migrations up streams, by keeping those waters free from the matters noxious to the fish, and from unlawful fishing, far greater things are yet to be accomplished in increasing our supply of fish. That our rivers may thus be made far more profitable than at present has been clearly proved by the results of the efforts made during the last few years. Our information on this national question has only recently been increasing. The same remark applies to our great sea fisheries; for it has only within the last few years been shown by the commissioners appointed to inquire into those fisheries that the value of the fish annually caught on the Great North Sea Dogger bank exceeds the value of all the yearly agricultural produce of the fine counties of Essex, Norfolk, and Suffolk.

SOUTH AUSTRALIAN STATISTICS.—The report on the crops and live stock of South Australia for the season of 1870–'71 states the area of land under cultivation to be 959,006 acres, against 850,576 acres the previous year. This was distributed as follows: Wheat, 604,761 acres, an increase of 72,626 acres; barley, 22,912 acres, increase 2,798 acres; oats, 6,188 acres, increase 1,750 acres; peas, 3,719 acres, decrease 133 acres; hay, 140,316 acres, decrease 1,583. The remainder is divided among other crops. The products were as follows: Wheat, 6,961,164 bushels; barley, 337,792, bushels; oats, 88,383 bushels; peas, 47,341 bushels; hay, 197,149 tons; potatoes, 9,563 tons; wine, 801,694 gallons; grapes sold, 35,847 hundred-weight. Average yields per acre: Wheat, 11 bushels 30 pounds; barley, 14 bushels 37 pounds; oats, 14 bushels 11 pounds; peas, 12 bushels 44 pounds; hay, 28 hundred-weight; potatoes, 57 hundred-weight. The cultivation of grape-vines occupies 6,131 acres, planted with 6,168,758 vines, of which 5,783,674 were in full bearing. The average product of wine in the last five seasons is 820,000 gallons, of which only 123,041 gallons have been exported. Fodder crops occupy 10,772 acres, and include wheat, barley, oats, lucern, artificial grasses, &c. Orchards and gardens cover 7,108 acres. The total

quantity of land of the province, exclusive of the northern portion, is 245,329,920 acres. Area sold, 4,198,999 acres. The live stock is reported as follows: Horses, 83,744, increase 9,916; cattle, 136,832, increase 17,135; sheep, 4,400,655, decrease 36,300; goats, 25,008, increase 11,031; pigs, 76,025, increase 12,199; poultry, 550,426, increase 182,587. The large decrease in sheep is accounted for by losses from drought, and overstocking in the far north, the absence of inducement for breeders to augment their flocks, and to the practice of boiling down and meat-preserving.

The road-steamer in Great Britain.—English papers publish an account of the trial trip of a new road-steamer, which made the run from Ipswich to Edinburgh by road, a distance of four hundred and fifty miles, in seventy-seven hours' traveling time. The engine is one of four now being built for the Indian government, under Thompson's patent, with India rubber tires, and is of 14 nominal horse-power, but which has been worked up to 80 indicated horse-power. Her weight is about 13½ tons; length, 15 feet; breadth, 8 feet 8 inches; height to top of chimney, 15 feet. The omnibus weighs about 3½ tons, and seats 21 passengers inside and 44 outside. The chief difficulties encountered by the engine on her journey appear to have arisen from foraging for water and coal. Since this trip she has made several of an experimental nature, in one of which she took 40 tons of gross load up a hill one mile in length, with an incline of one in seventeen. After a return journey to Ipswich, she will be shipped to India.

Indian department of agriculture.—A department of agriculture, revenue, and commerce has been created in British India, to take official cognizance of the following subjects: land revenue and settlements; advances for works of agricultural improvement; agriculture and horticulture; fibers and silk; studs and cattle-breeding; cattle disease; forests; meteorology; commerce and trade; customs, sea and inland; opium; salt; excise; stamps; minerals and geological survey; fisheries; industrial arts; museums; exhibitions; statistics; gazetteers; weights and measures; census; surveys, revenue, topographical, and trigonometrical.

METEOROLOGY.

OCTOBER AND NOVEMBER, 1871.

[COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS MADE BY THE OBSERVERS OF THE SMITHSONIAN INSTITUTION.]

Table showing the highest and lowest range of the thermometer, the mean temperature, and amount of rain-fall, (in inches,) for October and November, 1871, as reported by the observers at the stations named. Observations daily at 7 a. m., and 2 and 9 p. m.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
MAINE.		*Deg.*		*Deg.*	*Deg.*	*In.*		*Deg.*		*Deg.*	*Deg.*	*In.*
State Ag. College	10	72	21	27	47.8	7.50	1	53	30	0	29.0	3.58
Surry	23	71	21	27	51.0	.....	21	49	30	4	30.9	.....
Bucksport	23	65	21	31	49.3	5.23	1	52	28	5	31.3	3.65
West Waterville	11	74	21	28	50.3	6.94	1	48	30	4	31.1	3.87
Gardiner	10, 11	66	21	30	49.7	7.58	1	55	30	7	33.4	4.90
Lisbon	10	73	21	25	49.4	8.50	1	52	30	5	31.5	7.37
Standish	11	74	21	24	50.1	5.41	1	64	30	6	32.5	6.60
East Wilton	.....	.....	.....	.....	.....	.....	1	44	28	1	28.4	2.90
Norway	10	75	21	24	48.2	5.80	1	48	28, 30	2	29.4	5.40
Cornish	10	73	21	24	49.2	4.50	1	58	28	2	29.9	5.20
Cornishville	10, 11	72	21	27	50.8	5.90	1	61	30	2	30.6	5.01
NEW HAMPSHIRE.												
Stratford	10	78	21	19	45.2	4.80	1	50	28	—10	25.5	2.18
Whitefield	10	76	21, 25	18	45.4	5.74	1	60	28, 30	— 5	26.8	2.16
Tamworth	11	76	21	19	48.0	5.13	1	50	28	2	29.2	4.10
Contoocookville	11	77	25	32	51.5	4.30	1	67	30	3	33.1	6.20
Amoskeag	15	74	21	18	48.5	5.63	1	58	30	3	31.4	6.41
VERMONT.												
Lunenburgh	10	74	21	23	47.9	3.88	1	50	30	— 6	26.8	1.00
Craftsbury	10	68	19, 21	18	43.1	4.02	1	48	28	—15	22.6	2.43
South Troy	10	80	21, 25	22	47.9	4.55	1	52	29	— 5	26.7	2.78
Randolph	9	73	30	24	48.2	1.95	1	63	28	— 9	28.5	3.60
Woodstock	9, 10	70	21	20	44.9	2.06	1	58	28	— 9	26.6	2.83
Norwich	22	72	19	30	50.6	1.50	1	62	28	— 1	31.4	2.70
Near St. Albans	10	73	19, 21, 30	25	47.4	3.00	20	45	28	— 6	26.7	0.70
West Charlotte	2	70	21	26	51.1	5.06	1	55	28, 30	4	32.2	3.28
Panton	.....	.....	.....	.....	.....	.....	1	54	28	— 2	29.0	3.67
Castleton	10	72	21	25	49.9	4.12	1	58	30	— 2	30.9	2.55
MASSACHUSETTS.												
Kingston	23	75	21	29	54.0	4.63	1	60	28, 30	10	37.7	4.55
Lawrence	10, 15	74	21	30	52.3	4.82	1	63	28, 30	7	34.4	4.14
Milton	10, 23	78	21	28	55.3	4.13	1	63	30	9	38.5	4.18
Cambridge	9	78	21	29	53.9	.....	1	67	30	6	36.6	.....
North Billerica	9	76	21	24	51.5	.....	1	64	30	6	34.7	.....
New Bedford, (R)	10	69	21	31	53.2	6.53	1	59	30	9	36.8	6.76
Do. (T)	10	72	21	28	53.9	7.12	1	60	28, 30	10	36.7	6.77
Worcester	9, 23	76	21	30	55.5	5.31	1	65	30	5	37.1	5.04
Lunenburgh	15	74	21	28	51.9	5.36	1	63	30	2	33.7	4.62
Mendon	11, 23	73	21	25	52.5	4.10	1	63	30	6	34.0	3.10
Amherst	23	73	21	24	51.0	6.09	1	62	30	7	34.0	3.50

Table showing the range of the thermometer, &c., for October and November—Continued.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
MASS.—Contin'd.		*Deg.*		*Deg.*	*Deg.*	*In.*		*Deg.*		*Deg.*	*Deg.*	*In.*
Richmond	12	75	31	27	55.1	.....	1	50	30	—2	30.1	4.56
Williams College.	9	74	21	25	49.3	2.00	1	60	30	—5	32.0	2.74
Hinsdale	.....	.....	.....	.....	.....	.....	1	66	30	—8	27.2	4.45
North Adams	2, 9	75	30	29	51.3	2.23	.....	.....	.....	.....	.....	.....
RHODE ISLAND.												
Newport	10	74	21	32	56.8	6.06	1	61	30	10	39.8	4.13
CONNECTICUT.												
Columbia	23	80	20, 30	34	53.6	5.17	1, 18	58	30	6	35.4	4.63
Middletown	2, 10	73	21	25	52.5	3.60	1	63	30	11	35.6	4.06
Southington	23	73	22	29	52.6	6.05	1	61	30	9	35.2	4.15
Colebrook	9	74	21	20	50.0	6.48	1	62	30	0	30.4	4.34
Round Hill	23	75	21	33	53.6	4.98	1	64	28	8	40.7	4.30
NEW YORK.												
Moriches	23	76	21	30	57.6	5.23	1	62	30	18	42.2	5.59
South Hartford	2	76	30	30	52.1	3.50	1	72	30	—2	33.0	2.15
North Argyle	10	70	21	25	51.4	3.58	1	58	30	—5	29.1	2.65
Garrison's	15	76	21	31	52.3	4.47	1	67	30	13	36.9	3.99
Throg's Neck	23	76	21	32	55.9	.....	1	65	30	14	39.1	.....
White Plains	16, 23	73	30	34	54.6	.....	1	64	28	15	38.1	.....
Cooper Union	23	72	30	41	56.8	7.72	1	63	30	15	40.9	4.79
Brooklyn	15	75	21	32	54.5	5.35	1	66	30	15	40.8	4.37
Flatbush	15	76	30	34	54.3	2.40	1	63	30	15	40.6	7.18
West Day	9	71	21	26	48.7	2.85	1	51	30	—5	30.2	3.20
Glasco	23	77	21	30	52.8	2.83	1, 3	58	30	9	35.2	1.05
Minaville	5	74	19	32	51.7	.....	1	56	30	2	29.4	.....
Middleburgh	8	80	30	32	54.9	1.30	1	68	28	8	36.5	3.00
Canton	5	77	21	26	49.4	1.71	20	47	30	—5	28.5	2.70
Gouverneur	10	76	25, 30	26	48.1	1.63	1	45	30	—7	27.2	1.83
North Hammond	.....	.....	.....	.....	.....	.....	3	55	30	—8	32.5	3.01
Fairfield Semina'y	.....	.....	.....	.....	.....	.....	1, 15, 20	42	30	—5	27.7	.....
Cooperstown	9	77	21	22	50.0	1.97	1	58	28	—2	29.9	2.88
Lowville	18	87	30	26	48.5	1.42	.....	.....	.....	.....	.....	.....
South Trenton	9	76	21	24	49.8	3.86	1	55	30	—3	30.4	5.43
Cazenovia	9	77	30	28	50.5	.....	1	59	30	3	30.4	.....
Oneida	9	78	21	30	52.4	4.38	1	52	28	4	31.9	5.83
Depauville	9	78	21	28	48.8	2.00	1	56	30	—3	29.2	3.83
Oswego	5, 9	75	21	31	52.4	1.62	1	59	30	8	33.9	3.73
Palermo	9	78	21	26	49.8	1.20	20	45	28	3	29.5	3.20
North Volney	9	78	21	29	52.2	.....	1	60	28, 30	7	32.3	.....
Waterburgh	9	78	21	20	47.9	.....	1	57	30	4	30.3	.....
Nichols	9	77	21	24	51.2	.....	1	60	30	10	34.0	.....
Newark Valley	1, 9	78	21, 30	20	47.9	2.10	1	58	30	4	31.1	2.80
Himrods	9	80	20, 21	28	50.9	1.38	1	60	30	6	30.9	2.70
Rochester	10	76	20	34	55.8	1.55	1	57	.....	.....	38.0	3.70
Little Genesee	9	79	21	18	50.2	2.00	1	60	28, 29	9	31.2	3.83
Angelica	9	77	21	23	49.5	2.15	1	58	30	7	31.1	1.64
Carlton	9	81	20	29	52.8	1.25	26	48	28, 30	12	32.8	3.40
Lockport	10	78	29	33	52.7	1.15	1	49	30	11	31.4	4.15
Buffalo	10	78	18	34	53.5	1.70	13	55	30	11	33.7	3.00
Jamestown	9	78	21	31	51.3	2.10	4	55	28	14	33.7	2.30
NEW JERSEY.												
Jersey City	15	76	21	32	56.1	6.94	1	65	30	14	39.3	4.71
Newark	15	73	21	32	53.5	6.03	1	64	28	13	39.3	3.99
South Orange	15	72	21	22	48.7	6.27	1	62	30	8	31.7	3.02
Trenton	11, 15, 23	75	21	36	58.2	5.99	1	64	30	19	42.5	4.83
Moorestown	5	79	30	31	55.5	5.51	1	63	30	20	39.1	4.37
Rio Grande	14, 23	84	19	39	61.4	8.50	1	69	30	22	41.2	10.13
New Germantown	11	76	21	27	52.5	5.10	1	66	30	14	37.3	4.60
Readington	.....	.....	.....	.....	.....	.....	1	62	29	20	40.3	.....
Vineland	15	77	21	30	55.5	3.35	1	66	29	20	40.4	5.18

Table showing the range of the thermometer, &c., for October and November—Continued.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
N. JERSEY—Con'd.												
		Deg.		*Deg.*	*Deg.*	*In.*		*Deg.*		*Deg.*	*Deg.*	*In.*
Greenwich	23	76	21	35	57.2	3.40	1	66	29, 30	24	42.4	5.16
Atco	.....	.....	.....	.....	.....	.....	1	67	28, 29, 30	21	40.8	.....
Alloway's town	.....	.....	.....	.....	.....	.....	1	65	30	20	40.3	4.65
PENNSYLVANIA.												
Nyces	9	79	30	23	50.6	1.85	1	59	30	6	33.1	4.81
Dyberry	9	73	21	18	47.1	2.40	1	58	28, 30	6	31.4	2.70
Hamlinton	9	74	30	28	52.6	2.02	1	57	30	6	34.3	2.29
Fallsington	23	77	30	31	55.3	5.40	1	64	30	20	42.3	3.80
Germantown, (M.)	15	78	20	32	56.2	.....	1	60	28, 30	20	37.7	.....
Philadelphia	23	77	21	38	57.7	3.89	1	66	30	24	43.0	3.97
Horsham	15	77	30	31	54.8	4.25	1, 2	64	29, 30	20	39.0	3.78
Plym'th Meeting	15	78	21	30	54.6	3.36	1	66	30	20	39.5	3.27
Egypt	15	78	21	25	52.5	.....	1	63	30	15	37.6	.....
West Chester	5	77	21	29	53.2	4.80	1	65	28	20	39.2	5.37
Parkersville	23	75	29, 30	37	54.6	3.80	1	55	30	22	39.7	4.19
Factoryville	23	76	21	20	49.2	2.85	1	58	30	7	32.6	2.93
Reading	15	78	21	34	57.1	1.62	1	65	30	17	42.7	3.94
Ephratah (S.)	5, 23	76	1	38	56.1	2.14	1	56	28	19	38.6	3.44
Do (M.)	.....	.....	.....	.....	.....	.....	1	68	28	21	39.3	2.55
Tioga	9	78	30	16	45.2	1.15	1	50	30	2	28.9	1.60
Carlisle	15	76	30	33	54.7	3.30	1	62	29	23	40.9	3.35
Mt. Rock	15	77	30	26	52.5	2.39	.....	.....	.....	.....	.....	.....
Fountain Dale	5	76	30	33	55.2	3.10	.....	.....	.....	.....	.....	.....
York Sulp'r Sp'gs.	23	82	21	31	53.8	2.90	1	59	29	22	38.8	3.40
Grampian Hills	5	78	21	24	47.5	2.88	1	57	28	12	31.5	4.71
Johnstown	9	85	21, 30	26	52.6	2.75	1	58	23	15	35.7	3.00
Greensburgh	5	80	19	34	54.5	4.15	4	62	28	22	39.6	3.93
Connellsville	5	81	19	30	54.4	.....	1	60	23	12	37.7	.....
Brownsville	5	86	21	32	57.1	.....	3	68	23	20	41.9	.....
Pittsburgh	5, 10, 26	76	21	34	55.1	2.40	26	63	23, 30	23	39.9	2.76
Greenville	5, 26	74	21	29	50.3	1.75	4, 13	52	28, 29, 30	20	34.1	4.75
Newcastle	5	77	{ 13, 17, 20, 21 }	32	55.1	1.70	4	54	23	15	36.6	2.75
Beaver	.....	.....	.....	.....	.....	.....	3	60	30	24	39.8	.....
Cannonsburgh	5, 9	85	21	29	52.6	1.79	4	64	23	12	37.3	1.92
DELAWARE.												
Milford	5	80	29	34	58.9	3.15	1	67	30	23	43.2	5.65
Dover	5	80	30	34	56.2	2.70	1	66	30	24	43.2	3.73
MARYLAND.												
Woodlawn	23	78	21	32	56.3	3.65	1	66	29	22	40.6	5.00
Fallston	15	78	21, 29	35	55.0	3.82	1	67	29	24	40.8	4.95
Woodstock Coll.	15	77	30	30	53.4	3.32	1	66	29	23	39.3	4.84
Annapolis	15	80	19	36	58.9	3.69	1	69	30	26	45.4	4.27
Saint Inigoes	.....	.....	.....	.....	.....	.....	1, 2	68	29, 30	30	45.5	5.09
Sam's Creek	15	75	30	31	55.5	2.27	1	60	29	22	40.2	2.54
Mt. St. Mary's	4, 5, 23	74	30	36	56.8	2.90	1	61	29	24	40.7	3.95
Frederick	5, 15	80	18	40	58.7	2.50	1	65	29	27	43.3	2.68
Cumberland	4, 5	70	30	34	54.1	2.60	5	58	29	25	40.6	2.25
Ellicott City	.....	.....	.....	.....	.....	.....	1	69	29, 30	26	41.6	.....
DIST. OF COLUMBIA.												
Washington	4	77	30	30	57.5	3.45	1	67	29	28	44.0	3.85
VIRGINIA.												
Johnsontown	15	79	19, 30	39	60.5	4.10	1	69	30	28	47.1	4.70
Capeville	15	82	20, 29	48	64.6	.....	1, 10, 20	68	30	32	51.6	.....
Hampton	15	82	29, 30	40	61.5	4.75	1	74	30	28	48.6	4.45
Comorn	4, 23	80	29, 30	39	60.7	3.21	1	70	30	27	45.1	3.62
Vienna (W.)	4, 15	82	29	41	63.2	4.90	1	69	29, 30	28	44.0	4.10
Do (B.)	19, 20, 27	80	12, 13	48	63.0	5.00	10	82	29, 30	28	56.6	1.00

Table showing the range of the thermometer, &c., for October and November—Continued.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
VIRGINIA—Cont'd.		*Deg.*		*Deg.*	*Deg.*	*In.*		*Deg.*		*Deg.*	*Deg.*	*In.*
Accotink	15	80	13	35	56.1	2.85	1	64	30	27	44.0	3.71
Wolf Trap, near Vienna.	4, 15, 23	78	30	32	56.5	2.70	1	66	23, 29	24	43.8	3.70
Near Waterford	4	83	21	30	57.0	2.90	1	66	29	20	40.9	3.00
Piedmont	15	80	30	32	55.1	3.10	1	68	29	22	41.6	3.20
Piedmont Station.	23	88	30	35	59.0	3.00	1	69	29, 30	26	42.6	3.25
Keswick Station	3	82	29	35	59.5	1.80	1	69	30	27	43.9	3.40
Mount Solon	15	82	13, 19, 29	31	56.3	3.65	3	70	17, 18, 29, 30	22	42.3	2.67
Lynchburgh	.....	.....	.....	.....	.....	.....	1	70	30	28	46.7	3.50
Wytheville	15	79	19	31	56.3	1.75	26	68	30	22	43.3	1.60
WEST VIRGINIA.												
Weston	27	78	19, 30	28	54.2	.....	.....	.....	.....	.....	.....	.....
NORTH CAROLINA.												
Tarborough	16	82	30	36	62.3	6.60	1	78	30	27	47.6	5.20
Oxford	4, 10, 15	78	19	38	61.0	2.70	1	68	30	26	46.5	4.50
Fayetteville (S.)	16	78	30	42	63.0	4.80	.....	.....	.....	.....	.....	.....
Do (L.)	16	84	30	42	64.8	4.90	.....	.....	.....	.....	.....	.....
Greensborough	10, 11	76	36	59	67.3	4.55	.....	.....	.....	.....	.....	.....
Albemarle	17	86	1	33	60.0	3.83	27	80	17	22	46.6	4.73
Statesville	10	76	1	32	57.3	4.75	1, 27	70	16, 17	22	44.8	4.75
Asheville (A.)	10, 15	75	1, 20	36	57.0	2.80	26	69	29	26	45.1	2.20
Do (H.)	.....	.....	.....	.....	.....	.....	1, 27	74	17	22	48.0	.....
Charlotte	16	77	30	42	62.4	.....	1	74	30	29	49.2	.....
Lenoir	23	72	13	39	57.7	3.50	.....	.....	.....	.....	.....	.....
SOUTH CAROLINA.												
Gowdeysville	23	78	18, 19	50	64.2	4.80	1	78	16, 17	28	52.9	4.90
Greenville C. H.	28	82	12	49	61.9	5.00	27	82	16	30	52.4	3.66
GEORGIA.												
Berne	17	81	29	50	67.2	2.55	.....	.....	.....	.....	.....	.....
Saint Mary's	11	84	29	56	73.4	4.78	1	84	16, 17	40	64.9	1.42
Quitman	16, 23	87	12	49	71.2	3.40	1, 27	80	17	35	62.3	5.40
La Fayette	8, 15	78	11, 12, 28	44	61.5	4.40	7	72	22	26	51.4	5.04
Macon	16	86	19, 20	52	67.3	2.25	1	80	17	34	56.1	8.25
ALABAMA.												
Huntsville	29	80	12	45	65.6	4.40	26	76	30	31	57.4	1.10
Moulton	15	75	19	41	62.9	4.40	9	67	22	30	50.0	1.35
Selma	6	86	12	46	70.6	1.60	6, 26	76	17	35	57.8	5.90
Carlowville	6	85	12	46	68.2	1.20	25, 26	76	30	35	55.6	8.74
Greene Springs	15	85	20	44	65.7	5.45	26	76	22	32	53.7	5.05
Coatopa	6, 15	84	28	44	66.0	3.80	.....	.....	.....	.....	.....	.....
FLORIDA.												
Near Port Orange	6	83	3	65	74.9	3.86	1	84	15, 16, 17	43	67.5	2.18
Jacksonville	17	91	28	58	75.4	3.23	1	86	17	41	66.7	3.23
Picolata	23	86	29	61	76.1	.....	.....	.....	.....	.....	.....	.....
St. Augustine	24	90	28	62	75.9	1.00	1	90	16, 17	46	69.0	.....
Pilatka	17	92	2, 29	62	77.7	3.72	.....	.....	.....	.....	.....	.....
Ocala	17, 26	96	2	60	68.0	.....	24	93	16	40	70.1	.....
Tampa	22, 23, 31	84	19, 29	57	70.5	2.10	1	84	16, 17	42	64.3	2.80
Wellborn	18, 24	90	28	59	77.7	3.12	2	83	17	40	69.3	1.95
TEXAS.												
Clarksville	9	80	31	42	65.1	.....	26	84	19, 30	33	54.9	.....
Near Clarksville	5	82	31	44	63.7	8.45	26	82	19, 24, 30	30	49.8	4.43
Gilmer	3, 9, 23, 25	85	16	40	65.0	8.60	.....	.....	.....	.....	.....	.....

Table showing the range of the thermometer, &c., for October and November—Continued.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
TEXAS—Cont'd.		*Deg.*		*Deg.*	*Deg.*	*In.*		*Deg.*		*Deg.*	*Deg.*	*In.*
Clear Creek	6	89	31	46	69.2	14.88	4, 26	80	30	36	58.3	4.64
Houston	22	90	31	49	71.8	.....	25	87	19	32	54.8	.....
Greenville	5, 23	84	31	40	66.7	4.46	.....	.....	.....	.....	.....	.....
Oakland	.....	.....	.....	.....	.....	.....	26	82	30	32	56.1	0.70
Sand Fly	4, 8, 9	89	28	47	67.6	6.10	26	87	19, 20, 30	32	56.2	.....
Bluff	9	88	31	46	71.2	15.10	25, 26	83	30	32	58.2	2.88
Clinton	9, 14	86	31	46	68.5	10.65	26	83	30	34	58.4	1.50
Austin	9	87	31	45	66.0	7.22	26	82	30	30	54.9	4.14
San Antonio	4	90	31	44	66.0	7.09	26	82	30	32	56.8	2.16
LOUISIANA.												
New Orleans	8, 14, 15, 16, 22	84	12	50	70.0	8.24	26	84	22, 30	42	60.0	7.95
Ponchatoula	25	90	20	50	73.4	12.50	8, 25, 26, 28	82	23	35	60.3	11.52
Shreveport	14	85	28, 31	50	69.8	.....	7	81	30	28	54.9	.....
MISSISSIPPI.												
Marion Station	15	86	12	40	65.6	2.10	25, 26	82	15	30	59.1	7.50
Philadelphia	9, 15, 22	80	12	44	66.0	2.00	.....	.....	.....	.....	.....	.....
Grenada	5, 22	84	19, 20	41	62.9	2.80	26	80	22	27	52.0	4.52
Near Brookhaven	14, 22	88	12	46	67.7	4.00	26	84	20, 22	33	53.7	9.20
Columbus	5	82	12, 19	46	64.1	2.61	26	77	22	32	52.8	5.10
ARKANSAS.												
Pocahontas	.....	.....	14	37	.....	.....	25	77	30	26	45.7	2.60
Clarksville	5, 8, 25	82	12	40	60.5	7.95	26	72	20, 29	25	38.1	2.30
Mineral Springs	5,8,9,10	88	19	38	60.5	3.75	5	74	19,20,21	26	45.8	2.10
TENNESSEE.												
Elizabethton	2	86	19	34	60.3	2.31	3	78	17	22	49.7	3.45
Tusculum College	.....	.....	.....	.....	.....	.....	26	68	17, 30	27	48.9	1.80
Knoxville	5, 6	78	12	36	58.4	4.77	26	66	30	26	46.3	2.61
Lookout Mount'n	4	79	12	42	63.7	6.12	.....	.....	.....	.....	.....	.....
Clearmont	5, 9	78	19	36	59.1	1.00	26	73	28	23	47.1	2.22
Austin	4,8,9,25	80	12	36	60.7	2.05	4	72	21, 22, 24	26	45.8	2.20
Clarksville	5, 8	79	19	39	59.4	2.08	26	75	23	25	43.2	1.55
Trenton	20	86	12, 19	39	62.2	4.20	5, 26	77	29	25	47.3	1.20
La Grange	9, 25	82	7	43	63.0	3.00	26	78	30	24	49.1	3.70
KENTUCKY.												
Pine Grove	5, 9	78	19	34	54.1	2.44	26	70	23	14	41.1	2.83
Shelby City	9	78	19	38	58.2	2.51	5	68	23	22	43.8	2.68
Danville	9	80	29	41	59.9	1.34	26	74	23	22	44.9	2.33
Near Louisville	5	85	19	32	59.8	2.53	5	69	23	16	42.8	2.29
Blandville	.....	.....	.....	.....	.....	.....	5, 6	76	29	17	.....	2.35
OHIO.												
Salem	5	80	18	29	52.7	0.85	26	64	23	10	34.6	1.95
Martin's Ferry	5	82	19	31	57.1	.....	.....	.....	.....	.....	.....	.....
Painesville	5	76	28, 29	38	54.1	1.90	13, 26	51	29, 30	22	35.9	3.10
Baldwin's Univ., Berea.	5	81	18	34	55.0	2.53	2	55	23	16	36.6	4.35
Adams's Mills	9	78	29	29	54.2	1.55	26	70	23	13	37.8	2.03
Pennsville	4, 9, 23, 24	76	29	27	59.2	0.90	26	74	23	14	34.7	1.70
Gallipolis	.....	.....	.....	.....	.....	.....	26	74	23	16	41.9	1.70
Oberlin	5	80	18, 28	33	53.3	0.45	2, 3, 13, 26	54	23	10	34.2	2.05
Hudson	.....	.....	.....	.....	.....	.....	2	55	30	15	36.5	2.45
Sandusky	9	80	17	36	54.8	1.68	13	55	23	17	36.1	2.58

Table showing the range of the thermometer, &c., for October and November—Continued.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
OHIO—Continued.		*Deg.*		*Deg.*	*Deg.*	*In.*		*Deg.*		*Deg.*	*Deg.*	*In.*
Carson	5, 9	80	29	30	56.1	0.92	13	56	25, 30	20	38.2	1.00
North Fairfield	9	78	22	30	55.5	0.16	3	60	23	14	36.3	2.37
Westerville	5	82	29	26	52.5	0.88	5	59	23	8	36.9	3.32
North Bass Isl'd	5	80	29	33	55.6	0.73	2	54	30	18	36.8	2.31
Marion	9	78	29	26	52.7	1.16	5	57	23	10	34.9	3.41
Hillsborough	5	78	29	32	56.9	1.41	26	65	23	13	38.4	3.54
Bowling Green	5, 8, 9	85	29	25	56.1	2.80	3	65	25	9	37.7	3.30
Kenton	23	75	29	38	53.2	1.19	4	59	29	17	37.3	2.50
Bellefontaine	5	80	28	28	54.2	1.15	5	58	23	5	35.4	4.01
Urbana Univ	5	84	29	24	55.6	1.20	5	62	23	3	36.7	3.33
Bethel	5	83	12, 17, 28	34	60.3	1.13	26	69	23	8	38.5	3.30
Carthagena	5	81	17	31	56.7	4.32	4	62	25	4	38.6	6.08
Farmer	5	83	17, 18	33	53.8	0.80	4	59	25	2	36.0	3.05
Jacksonburgh	5	83	28	34	58.0	1.70	4	66	23	10	39.7	3.05
Oxford	5, 9	82	1, 12	31	54.3	1.77	5	63	23	3	38.3	3.20
Mt. Auburn Inst.	5, 9	80	28, 29	36	57.5	1.07	5	65	23	14	41.0	3.50
Cumminsville	9	79	29	32	53.4	1.15	26	66	23	12	39.1	4.55
Cincinnati (H.)	5, 9	83	28	41	57.5	0.98	6	68	23	13	41.4	3.40
Do (P.)	9	82	28	36	59.9	1.80	26	72	23	15	40.4	5.70
College Hill	5	79	1	37	58.6	1.35	26	70	23	9	39.0	2.70
MICHIGAN.												
Alpena	22	69	27	34	49.0	1.36	4, 9, 13	44	27	14	32.0	2.16
Detroit	5	84	21	25	52.0	1.45	2	55	23, 29	7	32.4	3.22
Monroe City	9	82	17	40	60.4	0.09	12	66	28	24	44.1	1.97
Ann Arbor	5, 9	79	18	33	53.9	1.10	4	53	29	9	34.0	2.49
Macon							4	57	23	9	33.3	2.40
State Agr'l Col	6, 24	80	7	27	54.0	1.43	4	62	29	−2	32.1	1.75
Litchfield	5	79	20	26	52.6	2.38	3	62	22	9	31.4	1.58
Olivet College	2, 8	79	20, 28, 29	33	52.6	1.50	4	56	29	8	32.5	2.50
Grand Rapids (H.)	9	79	20	31	52.4	2.72	4	62	29	−2	32.3	2.43
Do (S.)	8	76	20	31	51.6	2.71						
Northport	1, 9	75	28	33	50.2	5.62	4	50	29, 30	18	32.2	2.63
Benzonia	9	72	31	33	50.3	3.60	4	52	29	16	32.3	2.10
Copper Falls	1	72	27	27	42.7	3.40						
Ontonagon	1	68	20, 26, 27, 28, 30, 31	32	45.2	3.30	11	48	2, 3	2	27.8	2.80
INDIANA.												
Fort Wayne	5	85	28, 29	32	57.6	0.85	4	68	25	4	37.1	2.85
Mt. Carmel	5	78	28, 29	36	57.9	1.50	26	66	23	10	40.0	1.90
Aurora	5	84	29	32	56.2	1.09						
Rising Sun	9	82	28	31	54.7	2.05	26	70	23	19	39.7	3.38
Vevay	5	84	28	35	57.5	1.00	5	67	23	13	42.1	3.12
Spiceland	5	84	28	29	56.6	1.73	4	64	23	2	39.9	3.23
Knightstown	5	84	28	27	57.0	2.05	4	65	23	0	37.5	4.46
Indianapolis	5	84	29	28	54.5	1.57	3, 4	64	22	6	39.1	3.34
Livonia							26	68	23	10	37.3	2.50
Laconia	5	84	19	37	58.4	2.64	26	73	23	16	42.0	2.29
Bloomington	4, 5, 9	78	17, 28	34	55.9	1.12	4, 5, 8	60	23	9	38.2	3.23
Merom	5, 9	81	28	34	60.7	1.00	8	68	23	8	39.3	2.55
New Harmony	5	83	7	38	58.9	1.87	8	69	23	15	41.2	2.26
ILLINOIS.												
Chicago	8	85	28	30	56.9							
Near Chicago							3, 4	66	23, 30	10		
Evanston	8	81	28	27	53.7	1.13	4	60	23	7	34.3	2.96
Mattoon	4, 5	88	28	34	60.9	5.00						
Marengo	8	82	28	21	50.5	2.97	4	58	23	−3	30.4	2.25
Aurora	3	80	28	24	55.9	3.31	4	63	23, 25	1	32.5	2.78
Louisville	4	88	16, 17	34	59.0	2.50	8	72	23	10	39.3	2.50
Belvidere	4, 8	86	28	22	54.2	3.45	3	63	23	−3	31.3	1.82
Sandwich	4	85	28	21	53.6	5.04	3	68	25	−3	31.9	3.70
Decatur	4	88	28	28	57.6	2.50	9	64	22	4	36.2	1.25
Wyanet							3	65	23, 24	−1	34.9	3.35

Table showing the range of the thermometer, &c., for October and November—Continued.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
ILLINOIS—Cont'd.												
		Deg.		*Deg.*	*Deg.*	*In.*		*Deg.*		*Deg.*	*Deg.*	*In.*
Hennepin ...(O.)	4	88	28	26	58.0	1.10	4	67	23	2	35.1	2.80
Dubois	5	88	16	34	58.0	1.23	7	74	23, 29	11	38.8	1.62
Peoria	4	88	28	29	57.6	3.37	4	66	23	3	36.6	2.09
Havana	4, 20	88	28	26	55.2	3.05	4	66	24	0	34.4	1.95
Galesburgh	8	82	27	34	54.4	3.80	4	69	30	— 2	32.4	1.94
Waterloo	5	79	16	32	55.4	3.35	6, 8	64	29	5	36.0	2.10
Manchester	4	70	28	32	56.8	3.10	2, 4, 6	64	29	4	37.1	3.05
Near Manchester							4, 6	64	24	3	35.4	
Andalusia	4	81	28	32	55.9	1.23	4	64	29	— 2	35.2	1.36
Mount Sterling	4	78	28	40	58.4	4.20	3, 4	61	23	5	36.6	3.30
Oquawka	4	91	28	31	57.6	5.43	4	73	29	— 3	35.3	2.31
Augusta	8	83	28	30	55.8	5.61	3	68	29	— 3	34.6	2.76
Warsaw	4	92	28	30	57.5	6.73	2	67	29	0	34.2	3.83
Quincy	4	90	28	31	57.5	7.60	6	66	29	0	34.8	4.00
WISCONSIN.												
Manitowoc	22	77	28	28	50.1	3.35	2, 4, 7	50	23	8	32.8	1.20
Hingham	2	78	28	29	51.0		4	51	23	4	31.6	
Milwaukee	8	82	28	27	51.8	2.72	3	51	23, 30	8	32.8	2.40
Geneva	1, 3, 4, 8	82	28	23	50.8	2.23	4	59	23	— 4	30.1	4.05
Waupaca	8	78	20	30	49.7		3	56	23, 30	2	31.2	
Embarrass	1, 3	78	18	28	51.2	3.84	3	52	23	— 6	28.1	2.65
Edgerton	3, 4	82	28	26	53.7	1.60	2, 3	57	30	— 2	30.4	
Rocky Run	8	83	28	23	51.3	3.50	3	53	30	—16	36.6	2.55
Madison	8	80	28	27	52.5	3.07						
Mosinee	1	75	20	23	45.2	6.20	3	53	23	—13	25.3	
Baraboo	8	80	28	28	54.6	3.90	3	58	28	— 6	29.0	2.80
New Lisbon	8	88	27	22	53.4		3	62	23	— 7	30.0	
Bayfield			27	24	43.8		9, 12	48	23	— 2	27.0	
MINNESOTA.												
Beaver Bay	1, 3	70	27	25	44.8	3.30						
Beaver	8	80	27	24	46.4	2.70						
Afton	3, 4	75	31	28	50.8	3.00						
Saint Paul	1	78	31	23	47.5	1.98	2	57	29	—11	27.6	1.34
Minneapolis	8	80	31	20	45.8	2.34	1	53	29	—16	29.1	2.07
Sibley	4, 8	81	28	19	46.2	1.20	1, 3	53	29	—25	23.9	1.93
Litchfield	4	75	31	16	43.7	2.40	3	46	29	—23	20.7	1.80
New Ulm	4	88	31	22	50.4	1.69	1	60	29	—14	25.9	2.29
IOWA.												
Dubuque	4, 8	82	28	26	53.2	2.79	3	64	29	— 2	31.9	5.33
Bowen's Prairie	4, 8	88	28	18	53.5	3.50	2	64	29	—12	30.3	3.55
West Branch	3	81	28	22	52.0	2.87	3	62	29	—11	29.0	4.42
Guttenberg	8	88	28	20	51.1		3	62	23, 29	— 6	28.7	
Iowa City							3	56	29	—10	28.9	3.99
Mount Vernon	8	84	28	23	51.1		2, 3	60	29	—13	29.4	3.26
Fort Madison	4	84	18	33	55.7	4.36	3	61	29	— 4	33.8	3.20
West Union	23	90	28	24	53.4	2.43						
Independence	8	88	28	25	51.5	3.35	3	62	29	—14	28.1	
Near Independe'e	8	88	31	25	51.2	4.08	3	63	29	—16	26.4	4.35
Cresco			28	19		3.37	3	61	29	—15	25.5	2.97
Rockford	8	80	27, 30	29	51.9		3	58	29	—10	29.3	3.60
Iowa Falls	8	82	31	28	54.7	0.62	3	58	29	—10	28.6	3.56
Ames	8	89	28	25	53.2	1.80						
Algona	4	85	27,28,30	24	49.8		1	60	29	—18	27.2	
Afton	8	82	30	26	51.8	2.20	4	62			33.0	3.70
Fontanelle	4	88	30, 31	27	50.9	2.20	2	64	22	— 5	31.2	7.47
Grant City	4	88	31	22	52.1	1.10	2, 3	60	29	—13	27.7	6.40
Sac City	4	88	31	20	49.0	3.25	1, 3	58	22, 29	—12	36.4	4.10
Council Bluffs	4	86	30	26	52.2	1.95	6	74	22	— 6	31.5	3.35
Inst. Df. and Db., Council Bluffs.							1, 6	64	29	— 3	31.2	3.61
Logan	4	86	30	23	53.7	2.20	6	68	22	— 8	29.8	3.85

Table showing the range of the thermometer, &c., for October and November—Continued.

Stations in States and Territories.	OCTOBER.						NOVEMBER.					
	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
MISSOURI.		Deg.		Deg.	Deg.	In.		Deg.		Deg.	Deg.	In.
St. Louis Univ...	4, 5	84	28	39	60. 0	2. 65	8	67	29	12	40. 5	1. 08
Hematite	5	93	12, 16	33	58. 6	2. 62	2, 4, 6	75	25	6	39. 9	1. 68
Rolla	4	89	11, 18, 19, 27	30	56. 3	2. 98	6	74	29	11	38. 2	1. 69
Cave Spring	5	89	18	30	55. 9	7. 00	5, 8	70	29	8	27. 2	3. 90
North Springfield.	14	86	11, 18	34	56. 3	5. 64	6	74	29	7	37. 9	2. 10
Mount Vernon...	5	85	31	37	57. 9	8. 65	8	79	29	9	38. 8	4. 17
Kansas City	4	91	30	34	58. 0	3. 87	6	76	29	6	37. 4	1. 90
Nevada	4	90	31	36	58. 4	8. 50	6	65	29	8	38, 3	2. 41
Oregon	4	92	31	30	55. 9	2. 42	5	75	29	— 3	35. 4	3. 73
Corning	4	92	31	31	55. 4	1. 46	6	74	29	— 1	35. 7	1. 41
Saint Joseph							5	71	29	7	39. 3	3. 40
KANSAS.												
Paola	4	92	31	28	56. 9	5. 58	5	75	29	6	36. 9	1. 40
Baxter Springs ..	4, 8	84	31	36	59. 4	5. 30	6	78	29	10	39. 3	4. 12
Leavenworth	4	90	31	32	55. 4	3. 19						
Atchison	4	90	31	31	56. 4	4. 60	8	74	29	0		4. 00
Williamstown....	4	90	31	30	56. 4	2. 79	6	78	29	0		3. 30
Lawrence	4	90	31	32	55. 8	3. 58	5	73	29	3	35. 9	2. 48
Williamsburgh ..	4	92	31	32	57. 7	3. 85	5	73	29	4	37. 2	2. 27
Holton	4	90	31	30	56. 3	3. 56						
Burlingame	4	90	15, 31	31	56. 3	3. 25	6, 7	70	29	2		2. 95
Le Roy	4	92	15	32	58. 9	4. 57	5, 7	75	29	6	40. 3	5. 03
State Ag'l College	4	91	31	31	57. 6	1. 14	5	72	29	4	37. 0	2. 15
Council Grove ...	4	89	31	30	56. 3	3. 35	5	72	27, 29	8	36. 5	2. 40
Douglass	4	94	15	26	56. 5	3. 55	5, 6	74	27	6	38. 4	2. 30
Holden	4	91	15, 30	29	56. 6	0. 10	6	78	27	4	34. 0	2. 60
Olathe	4	90	6	32	56. 7	3. 10	6	74	29	3	34. 8	
NEBRASKA.												
De Soto	4	90	30	25	53. 3	1. 18	1	66	29	— 8	29. 4	3. 82
Bellevue	4	92	15	27	53. 7	1. 20	5, 6	69	29	0	34. 0	3. 20
Nebraska City...	4	91	30	26	54. 6	0. 50						
Emerson			30	22		1. 40	4	72	29	—10	31. 9	2. 55
Omaha Agency ..							2	74	29	— 8	30. 8	4. 45
Santee Agency ..	3, 20	85	31	20	50. 4	0. 25	2	73	29	—16	27. 0	2. 65
UTAH.												
Coalville	3	74	30	12	44. 7		14	55	30	—21	28. 1	2. 50
CALIFORNIA.												
San Diego	18	88	29	52	64. 6	0. 00	21, 22	79	30	41	57. 2	0. 90
Taylorsville	2	87	30, 31	28	55. 8		2, 4, 5	66	30	15	41. 8	
Monterey							1, 2, 3	90	30	38	27. 8	0. 50
Mendocino	2	86	30	50	62. 5	0. 30	10, 19, 21	70	30	41	60. 2	4. 89
MONTANA.												
Deer Lodge City.	3	78	13	9	41. 0	0. 79						
Missoula	4	79	29, 30	21	45. 4	0. 65	2	58	26	—2	32. 1	2. 54
WASHINGTON.												
Union Ridge	2	78	13	29	52. 0							
Cathlamet	2	59	13	33	50. 2		14	57	6, 7	30	44. 3	
Port Angeles	2	59	28	44	51. 8	6. 92						
COLORADO.												
Denver	3	85	14, 31	24	53. 5	0. 40	1, 2, 3, 4	70	30	0	35. 8	3. 10
Fountain							15	62	30	10	33. 4	0. 79
OREGON.												
Portland	1, 2	75	31	35	53. 9	1. 19						
Eola	1	69	30	28	48. 9	0. 68						
Astoria	16	64	28	40	51. 6	3. 85	1	56	29	53	44. 5	1. 44
WYOMING.												
Laramie City	1	74	14	4	40. 0		1	64	30	—20	28. 1	1. 20

NOTES OF THE WEATHER.

October, 1871.

Orono, Me.—Heavy frost 17th; earthquake 19th.

Bucksport, Me.—Frost 1st, 8th, 17th, 19th; a haze bearing the appearance of dense smoke.

Mount Desert, Me.—A gale the night of the 6th; smoky 9th and 10th; smart rain 12th and 27th; hard frost 17th and 21st.

West Waterville, Me.—Flooding rain, doing much damage to railways and highways throughout the State; first snow of the season, also a slight earthquake, 19th; very smoky 23d; average temperature 3°.71 above that of the last seven years, and the average rain-fall 2.33 inches greater.

Gardiner, Me.—Month very warm, and wet; mean temperature 2°.16 higher, and the average rain-fall 2.91 inches greater, than for the last thirty-five years.

Lisbon, Me.—Severe rain 12th; four inches fell from 8 a. m. to 1 p. m.; streams higher than for forty years; seven main bridges and all smaller ones, together with a house and barn, swept away and destroyed; railroads badly damaged; sun totally obscured by a dense smoke all day 23d.

Standish, Me.—Dense smoke 9th and 23d.

Oxford, Me.—Very smoky 9th, 10th, 13th, 22d, 23d; sun entirely obscured at times; heavy rain 12th; high wind 20th.

Cornish, Me.—Ten days smoky; earthquake 18th.

Cornishville, Me.—Month has been warm and pleasant.

Whitefield, N. H.—Atmosphere very smoky, making it impossible to determine the kind of clouds or amount of cloudiness, 8th, 9th, 13th, and 23d.

Tamworth, N. H.—Ground frozen 1st and 21st; atmosphere very smoky 5th, 6th, 7th, 8th, 13th, and 23d.

Contoocookville, N. H.—Very smoky atmosphere 8th, 7th, 13th, 22d, and 23d.

Dunbarton, N. H.—It has been quite smoky on several days. There have been no great fires in this region.

Lunenburgh, Vt.—Frost 1st, 8th, 14th, 20th, 21st, and 30th.

Craftsbury, Vt.—First snow 18th.

South Troy, Vt.—Rain and hail 4th; light snow 18th, 19th, 20th, and 29th.

Randolph, Vt.—Dense smoke, smelling of fire, 13th. Smoke so dense as to make it difficult to read, affecting the taste and making the eyes smart, 23d; springs and streams still low.

Castleton, Vt.—Air full of smoke 12th.

New Bedford, Mass.—Hard frost 1st, 19th, 21st, 28th, and 30th.

Lunenburgh, Mass.—Very smoky atmosphere, with a strong smell of burning wood, the darkness at times making it difficult to read, 21st to 24th.

Mendon, Mass.—Very smoky 8th, 9th, 20th, 21st, 22d, and 23d; wells low; reservoirs empty.

North Adams, Mass.—Atmosphere so full of smoke that no clouds could be seen 23d, 24th, and 25th.

Newport, R. I.—First ice 21st.

Southington, Conn.—Very smoky 5th, 8th, 12th, and 24th; first hard frost 21st.

West Day, N. Y.—Twelve smoky days.

Cooperstown, N. Y.—Month dry; springs and wells very low; dense smoky atmosphere 21st to 24th.

Lowville, N. Y.—First snow 28th.

Cazenovia, N. Y.—Hail 3d; frost 1st, 8th, and 13th.

Depauville, N. Y.—Frequent high winds; thick smoke 22d.

Palermo, N. Y.—Air full of smoke 22d and 23d.

Newark Valley, N. Y.—Very dry month; springs low; water scarce.

Angelica, N. Y.—Rain, hail, and thunder 3d; snow and rain 11th; very smoky 6th.

Buffalo, N. Y.—A gale 19th.

Jamestown, N. Y.—Wells dry during the month.

Rio Grande, N. J.—Heavy frost 19th and 30th.

Vineland, N. J.—Month pleasant; wells low.

Fallsington, Pa.—Frost 19th; ice 21st; dense smoke 24th.

Plymouth Meeting, Pa.—Month mild; frost 1st, 8th, 13th, 18th; ice 21st and 30th; high winds from 18th to 31st.

North Abington, Pa.—Dense smoke, affecting the eyes, 5th, 8th, 11th, 14th, 23d, and 24th.

Ephratah, Pa.—The month has been very smoky throughout, often obscuring the light of the sun.

Carlisle, Pa.—Temperature 3° above the average; rain-fall below the average for October; but few frosts.

Connellsville, Pa.—Dense smoke, brought by northwest wind, 6th, 7th, 8th; rain and snow 11th; heavy rain, with sharp lightning and thunder, 26th.

Greenville, Pa.—Frost 1st, 8th, 13th, 17th, 20th, 21st; less water in Chenango Creek than ever known before.

Fallston, Md.—Near midnight a northwest wind filled the house with a pungent smoke, alarming the inmates, 6th; dense smoke also 12th.

Sam's Creek, Md.—Month very dry till 25th; frost 1st, 8th, 13th, 19th, and 30th; first ice 21st; smoky 8th, 9th, 12th, 13th, and 14th.

Johnsontown, Va.—White frost 19th, 21st, and 30th.

Capeville, Va.—First heavy frost 30th.

Wytheville, Va.— A dry month.

Fayetteville, N. C.—Smoky 2d, 7th, 13th, and 31st; heavy rain night of 17th.

Albemarle, N. C.—Very smoky; wind northwest 7th, 8th, and 16th; high wind and copious rain night of 11th; a dry month, and unusually warm.

Gowdeysville, S. C.—Month unusually warm; not frost enough to injure the tenderest plants; violent shower 11th.

Greenville, S. C.—Atmosphere very smoky 8th and 9th.

Moulton, Ala.—Month mild and pleasant, the greater portion dry; no severe frosts; heavy rain 15th and 16th.

St. Augustine, Fla.—Month cool and pleasant, with frequent light showers.

Clarksville, Tex.—But little rain during the month, and no frost.

Sand Fly, Tex.—Month wet and cold.

Delhi, La.—White frost 11th.

Marion Station, Miss.—Slight frost 19th and 28th.

Brookhaven, Miss.—An exceedingly pleasant month; nine cloudless days.

Elizabethton, Tenn.—Month unusually warm and pleasant; no hard frosts.

La Grange, Tenn.—Dense smoke 4th; very smoky 11th to 14th; light frost 28th.

Arcadia, Ky.—Month warm and pleasant.

Westerville, Ohio.—Heavy frost 1st.

Urbana, Ohio.—Most of the month hazy and smoky; mean temperature higher than usual; ten days cloudless.

Elmwood, Ohio.—Streams lower than ever known before.

Farmer, Ohio.—Month remarkable for extensive fires, and want of rain.

Sandusky, Ohio.—Nine very smoky days.

Bowling Green, Ohio.—Month noted for fires on the prairies, in the woods and swamps, and smoke everywhere; also for scarcity of water.

Mount Auburn, Ohio.—First killing frost 29th.

Grand Rapids, Mich.—At nineteen observations smoke has been so dense that the clouds could not be seen.

Litchfield, Mich.—Severest drought within the memory of the oldest settlers; great destruction of hay and timber at the north of the village.

Benzonia, Mich.—Dense and almost impenetrable smoke the first sixteen days and the 23d and 24th.

Copper Falls, Mich.—A stormy, unpleasant month.

Northport, Mich.—Extensive fires in the State 8th; air hot in the evening, (8 o'clock,) almost suffocating, 8th.

Knightstown, Ind.—Still dry, and wells failing.

Fort Wayne, Ind.—The woods and prairies on fire in every direction; air full of smoke; wind hot and dry 8th and 9th; frost 17th and 18th; ice 28th and 29th.

Rising Sun, Ind.—Ohio River lower than for thirty years; width from bank to bank, 693.22 yards; month very dry.

Chicago, Ill.—Hurricane for a few hours 14th.

Aurora, Ill.—Dense smoke 24th and 25th.

Louisville, Ill.—Violent gale from the south all day; great conflagration in Chicago; a dry month; wells nearly empty.

Manchester, Ill.—Month dry; pastures unproductive; dews light; streams unusually low; fruit good and plenty.

Hennepin, Ill.—Smoky 4th, 5th, 23d, and 24th.

Marengo, Ill.—The drought that commenced the 1st ultimo, and continued to the 30th instant, was probably the greatest ever known here.

Dubois, Ill.—Great wind-storm from the southwest 9th and 14th; first killing frost 15th; drought still continues, 31st.

Galesburg, Ill.—Month very fine; warm days following the storms, and but little frost.

Bayfield, Wis.—Heavy frost 6th; rain 11th, 12th, and 13th; light snow 31st.

Madison, Wis.—Snow 31st.

Bloomfield, Wis.—Fierce fires have raged through our northern counties, destroying everything in the section burned; five hundred persons are said to have perished.

Mosinee, Wis.—Smoky 3d and 4th; woods on fire in a great many places 5th; fire in the woods, everywhere about us, 8th. This has been a beautiful season, but rather too dry.

Embarrass, Wis.—Furious fire in the woods, southeast and southwest, destroying everything before it, 1st; soaking rain, that stops the devastating fire, 14th; snow 31st.

Milwaukee, Wis.—Smoky; fires all the way from Lake Michigan to

Dakota. Chicago and several towns burned 4th, 5th, 9th; ice, 18th; snow and ice 27th; a rainy day 31st.

Baraboo, Wis.—Fine weather; too dry to plow; snow 31st.

New Ulm, Minn.—Frost 6th; ice 17th, 27th, 30th, and 31st.

Whitewater, Minn.—Snow 14th and 15th.

Litchfield, Minn.—Prairie fires raging 1st, 2d, 3d, 4th; dense smoke 3d and 4th; snow 9th; ground frozen 12th.

Bowen's Prairie, Iowa.—Month very dry.

Rockford, Iowa.—A much-needed rain 13th; many wells dry that never failed before; frost 15th.

Fontanelle, Iowa.—Smoky 1st to 8th, and 18th to 25th; ice 15th, 16th, 26th, 27th, 28th, and 30th; snow 31st.

Algona, Iowa.—There has been but little rain; a slight snow-storm 14th, since which the weather has been delightful.

Guttenburgh, Iowa.—First railroad train arrived 1st; grade of track one foot per mile; rain to just lay the dust 9th, 25th, and 26th; soft snow 31st.

Independence, Iowa.—Very smoky 2d, 3d, 4th; prairie-fires doing great damage; hard frost 6th; hard gale from the south 8th; snow 31st.

Hematite, Mo.—A high wind from the north, lasting a few minutes, brought a dense cloud of smoke 5th.

Cave Spring, Mo.—Many springs and wells dry; creeks and small streams all dried up; stock on the prairies suffering for water; ground too hard to plow 5th; ground getting wet; waters rising 27th. Two pelicans captured, the first ever seen here, 10th.

Corning, Mo.—Rained and snowed, and froze as it fell, 31st.

Douglass, Kans.—Heavy frost 6th, 10th, 11th, and 31st.

Williamstown, Kans.—Rain 30th; hail, followed by snow; trees loaded with ice 31st.

Holton, Kans.—Quite dry most of the month.

Council Grove, Kans.—Extensive fires on the prairies 1st, 2d, 3d; frost 2d, 6th, and 15th; everything covered with ice; limbs of trees breaking 31st.

Le Roy, Kans.—Month warm and pleasant; rain plenty from the middle to the last; no ice till 31st.

Santee Agency, Nebr.—Frost 6th, 10th, 14th, 15th, 16th, 26th, 27th, 29th, and 30th.

Omaha Agency, Nebr.—Month dry and pleasant; frost 16th; half inch of snow 24th and 25th.

Emerson, Nebr.—First snow 14th.

Denver, Colo.—First killing frost 3d; first and only snow 13th and 14th.

Harrisburgh, Utah.—Month pleasant and very dry; creeks lower than ever known before at this season; farmers have lost their crops by grasshoppers and drought. Bread will have to be hauled three hundred miles.

Missoula, Mont.—Showery 1st, 7th, 8th, 27th, and 28th; first ice in creek 13th; storming in mountains 7th, 8th, 24th, 25th, and 26th.

Laramie City, Wyo.—First snow, with heavy thunder and lightning, 8th; one inch of snow fell on plains and two feet on mountains 12th. Coldest day 14th.

Indian Valley, Cal.—Heavy white frost 10th, 11th, 14th, 28th, 29th, 30th, and 31st, with ice half an inch thick; frequent showers and snow on the mountains 27th.

Cathlamet, Wash. Ter.—A pleasant month; only four rainy days; heavy showers night of 26th.

Portland, Oreg.—Slight frosts 8th, 9th, 10th, 13th, 16th, 17th, 29th, 30th, and 31st.

November, 1871.

Lisbon, Me.—Unusually cold for November 28th, 29th and 30th; Androscoggin frozen so that men cross on foot.

Gardiner, Me.—Good sleighing 11th, 12th, 13th, and 14th; river closed 29th.

Oxford, Me.—Sleighing 10th to 17th, and 24th to 27th; terribly cold and windy 30th.

Mount Desert, Me.—Severe gale all last night, heavy rain, some snow and hail, highest tide for many years 16th; very cold 28th, 29th, and 30th.

Contoocookville, N. H.—Ten inches of snow fell 10th and 11th; heavy rain 16th; three of the coldest days ever experienced in November; mill-wheels stopped by anchor ice from the river 28th, 29th, and 30th. A cold month, rain and melted snow nearly twice the usual amount; ground frozen 8 inches.

Stratford, N. H.—Snow on seventeen days; the coldest November in seventeen years.

Tamworth, N. H.—Ground continued frozen throughout the day 5th; aurora brilliant and blood-red 9th; ponds closed over 28th; ground covered with snow from the 10th.

Shelburne, N. H.—The last three days said to be the coldest ever known here in November; Androscoggin River frozen over the earliest for more than twenty-five years.

Dunbarton, N. H.—An unusual amount of rain this month.

Woodstock, Vt.—Brilliant aurora borealis 9th; ponds frozen over 12th; boys skating 13th; river cleared of ice 16th; ponds frozen and boys skating again 28th.

Norwich, Vt.—Remarkably cold for the season 30th.

Craftsbury, Vt.—A cold November, remarkable for the extreme cold of its last three days; sleighing since the 25th.

Lunenburgh, Vt.—A meteor observed east-northeast about half the diameter of the moon, and so bright as to cast a shadow, though the moon was shining at the time.

Near St. Albans, Vt.—A little snow 3d, 7th, 8th, and 11th.

Panton, Vt.—Sharp winter weather, but little snow, 30th.

Randolph, Vt.—Water froze one and one-half inch thick 5th; seven inches of snow fell 10th; rain carried off the snow 15th and 16th; weather mild from 15th to 21st; nine inches of snow fell 24th; weather very mild 25th to 28th; the coldest November in seven years.

West Charlotte, Vt.—Seven and a half inches of snow fell 11th; month unusually cold.

Lunenburgh, Mass.—The 28th and 30th were the coldest mornings that have occurred in November in thirty-three years—the thermometer below zero in some places—a high wind, blowing at times a gale; these days have been seldom exceeded in severity in the depth of winter.

New Bedford, Mass.—An exceedingly cold day on account of the violence of the wind 30th. Ice prevented in the harbor by the wind.

Richmond, Mass.—Snow, hail, and rain, which froze on the trees and gave them a beautiful appearance for several days, 11th. Coldest November days we have ever known—ponds, &c., firmly frozen—28th, 29th, and 30th.

Southington, Conn.—A furious wind from 2 to 4 a. m., prostrating trees

and fences; the last three days of the month the coldest November days within the memory of the oldest inhabitants.

Cooperstown, N. Y.—Colder than any November in twenty-one years; the last three days severely cold; ground frozen 6 inches deep; very little rain; lake and streams as low as in August.

Newark Valley, N. Y.—Very cold and blustering 30th; streams low.

Lockport, N. Y.—Canal closed with ice 29th.

North Hammond, N. Y.—Mornings very cold 28th, 29th, and 30th; St. Lawrence River exceedingly low.

Middleburgh, N. Y.—The last three days of the month the coldest for the time of year remembered here; ground nearly bare.

Palermo, N. Y.—The coldest November in eighteen years.

Canton, N. Y.—First snow 7th.

Garrison's, N. Y.—Gale from northeast night of 14th and 29th; gale from northwest 30th; ponds frozen 8 inches.

Brooklyn, N. Y.—Gale from eastward with heavy rain 14th; first snow 16th.

Depauville, N. Y.—First snow of the season 2d; coldest weather in November remembered for forty years 30th.

South Trenton, N. Y.—A remarkable smoke, following immediately upon a change of wind to the west, filled the entire canopy; the odor was that of burning buildings 11th.

South Hartford, N. Y.—Colder than any November for the last ten years.

Trenton, N. J.—First ice 6th; first snow 16th.

Vineland, N. J.—Rains 1st, 10th, 20th, and 24th; most violent wind and rain storm 14th; snow in the night 21st; month colder than usual.

Ephrata, Pa.—First snow of the season 16th.

Carlisle, Pa.—The atmosphere this month has been particularly pure and salubrious, and general good health prevails among the people.

Plymouth Meeting, Pa.—A cold month, and the windiest on record; first snow 16th; violent storm of wind and rain, many trees prostrated, 14th; last three days severely cold.

Dyberry, Pa.—The coldest November for the past fifteen years; the last three days remarkably cold, forming ice 4 inches thick.

Greensburgh, Pa.—First permanent snow 15th.

Germantown, Pa.—First slight snow 16th.

Tioga, Pa.—Very dry; streams, wells, and springs very low, 30th.

Milford, Del.—Gale with violent rain 14th; violent wind night of 15th; snow night of 28th.

Dover, Del.—First snow, light, 16th.

Frederick City, Md.—Ground frozen 3 inches deep, 30th.

Fallston, Md.—A few flakes of snow 24th and 28th.

Sam's Creek, Md.—Frost 12th; first snow 16th; snow and hail 24th; ground frozen 3 inches deep 30th.

Wytheville, Va.—The season has been remarkably fine, not enough snow at any time to cover the ground; ground frozen for the first time 30th; rain is much needed; springs are failing.

Lynchburgh, Va.—First killing frost 12th.

Piedmont, Va.—First snow 2d; heavy rain 14th; cold, with high wind, 15th and 16th.

Statesville, N. C.—First killing frost 15th—three weeks later than usual; two inches of snow 30th; early for the latitude.

Gowdysville, S. C.—Killing frosts, freezing the ground 1-inch 16th, 17th, and 18th; Very warm 27th; snow 30th.

Greenville, S. C.—First ice 15th; first snow 30th.

Atlanta, Ga.—First killing frost 16th.

Macon, Ga.—Thin ice 23d.

La Fayette, Ga.—First snow 30th.

Moulton, Ala.—The month damp, but mild and pleasant; first ice 16th; two inches of snow 30th.

Carloville, Ala.—The month has been very wet, but not cold—nothing killed on the uplands.

St. Augustine, Fla.—The month somewhat remarkable for cloudy and misty weather.

Jacksonville, Fla.—The only frost, 17th.

Ocala, Fla.—Frost 15th and 16th.

Austin, Texas.—Frost 19th, 20th, and 22d.

Delhi, La.—Frost 10th, 15th, 19th, 20th, 21st, and 22d; heat oppressive 25th, 26th, and 27th; cool 29th; storm of rain and sleet 30th.

Shreveport, La.—The rains have been very light; frosts very heavy; boating on the river good 30th.

Grenada, Miss.—Severe frost 10th and 15th; strong southeast wind with thunder, lightning, and rain 23d.

Holly Springs, Miss.—Deep snow for the latitude 30th.

Pocahontas, Ark.—First snow, succeeded by a sudden rise of the thermometer and a heavy rain, storm 23d.

Mineral Springs, Ark.—Frost 2d.

Elizabethton, Tenn.—There has been but little rain during the month, and the streams are unusually low for the season.

Knoxville, Tenn.—First killing frost 18th.

Clarksville, Tenn.—Frost 3d, 12th, 16th, 17th, 20th, and 21st.

Blandville, Ky.—First ice 11th; northwest gale with rain, which changed to snow 13th; ground, trees, and fences covered with ice 24th.

Johnsonburgh, Ohio.—First ice 11th.

North Bass Island, Ohio.—Heavy frost 3d; ice one-fourth inch 7th; first hard freezing of the ground 16th.

Salem, Ohio.—A very dry month; wells and springs have failed; water scarce.

Kenton, Ohio.—First snow this fall 14th.

Litchfield, Mich.—Snow to cover the ground 22d; springs very low; rain enough to prevent fires from running, but in many localities the muck is still on fire and undermining the timber 30th.

Alpena, Mich.—End of the month very cold. The fall has been very stormy.

Rising Sun, Ind.—Northeast gale for an hour 10th; the only hard frosts 11th and 12th; air sultry, rocks and walls of houses dripping with moisture 26th; Ohio River rising 30th.

Vevay, Ind.—Frost 1st, 3d, and 4th; hard frost 6th, 11th, 16th, 17th, and 30th.

Fort Wayne, Ind.—Hard frost and thick ice 11th, 12th, and 17th; first snow 21st; warm, snow all gone 26th.

Spiceland, Ind.—First snow since March 11th, 21st.

Galesburgh, Ill.—The first of the month was pleasant, but the last ten days were unusually cold and wintry.

Belvidere, Ill.—First of the month moderate; after 23d unusually severe; less than a week of Indian summer.

Dubois, Ill.—First snow-storm: commenced feeding cattle 14th.

Quincy, Ill.—Extreme height of the Mississippi River during the month 2 feet 9½ inches above low-water mark, 19th; lowest stage of

water 3 inches above low-water mark, 29th; floating ice in the river 3 inches thick, 30th.

Andalusia, Ill.—Mississippi River quite low; froze over 28th; earlier than for twelve years previous.

Oquawka, Ill.—Mississippi River closed 29th; the first time in November since 1842.

Hennepin, Ill.—The last week of the month smoky, with little snow-falls. Water (stock) scarce.

Aurora, Ill.—The coldest November in seven years.

Augusta, Ill.—First snow 22d.

Mount Sterling, Ill.—First snow of the season, immediately succeeding a heavy rain, 19th.

Milwaukee, Wis.—Milwaukee River covered with ice, which was broken by steam-tugs 23d.

Rocky Run, Wis.—A year of extremes in droughts and floods. The ground has never been washed and gullied so badly before since the settlement of the country as this year.

Embarrass, Wis.—Snow 6th, 9th, 19th, 20th, 21st, 23d, 25th, and 26th; rain 13th; ground frozen hard 16th; wells and brooks very low; Wolf River frozen, men crossing on the ice 26th; cattle foddered throughout the month.

New Ulm, Minn.—Minnesota River frozen over 21st; average depth of snow 4 inches 30th.

Algona, Iowa.—The coldest November since the settlement of the country.

Council Bluffs, Iowa.—Missouri River closed 23d; ground frozen one foot deep 28th.

Oregon, Mo.—Prairies burning northwest and southwest 6th; drizzling rain 7th and 12th; showers 17th and 18th; snow 18th, 19th, 23d, and 28th.

Rolla, Mo.—A little snow 19th and 22d; a fine mist all day 26th and 27th.

Mount Vernon, Mo.—Hard frost 10th; drizzling rain 13th; first snow, melting as it fell, 17th; snow to the depth of 6½ inches 23d; coldest weather for November in several years; ground froze to the depth of three inches 26th to 30th.

Nevada, Mo.—Winter unusually early for this latitude; month goes out with moderating signs.

Le Roy, Kans.—Snow 21st; month wet and cloudy; colder toward the last than usual.

Burlingame, Kans.—The last thirteen days of the month the most severe known to the oldest inhabitants; wind all the time from northwest, with slight snow 20th, 26th, 27th, and 29th; ground frozen four inches deep 30th.

Lawrence, Kans.—The coldest November on record; first eighteen days warmer than usual, the last thirteen colder; Kansas River closed 27th; never before in November.

Omaha Agency, Nebr.—Winter has set in unusually early; sleighing from the 18th to 30th.

De Soto, Nebr.—Missouri River frozen over 22d.

New Castle, Nebr.—Greatest snow-storm in five years 17th, 18th, and 19th; pleasant 21st.

Emerson, Nebr.—Coldest November on record.

Santee Agency, Nebr.—Rain and first snow 12th; floating ice in the river 11th; snow-fall of 14 inches 18th; Missouri River closed 19th.

Harrisburg, Utah.—Wide cracks in the ground caused by drought,

1st; ice, 1st, 8th, 16th, 29th; the last half of the month unusually cold; the mountains covered with snow, which has not occurred before February for the last three years; ground frozen 30th.

Denver, Col.—The most snow and coldest November known in Colorado since its settlement, thirteen years.

Astoria, Oreg.—Southern gales 1st, 3d, 13th, 14th, 15th, and 23d; slight snow 26th; light frost 16th and 30th.

Laramie, Wyo.—The worst November ever known here—trains often delayed by drifted snow.

St. John's, New Brunswick.—Brilliant aurora borealis 9th; navigation closed on river St. John's 23d.

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